# RECORD OF DECISION

Radiation Technology, Inc. Site

Rockaway Township, Morris County, New Jersey

U.S. Environmental Protection Agency

Region II

2011

# DECLARATION STATEMENT

# RECORD OF DECISION

## SITE NAME AND LOCATION

Radiation Technology, Inc. (EPA ID# NJD0047684451)
Rockaway Township, Morris County, New Jersey

## STATEMENT OF BASIS AND PURPOSE

This decision document presents the Remedy to address a drum disposal area at the Radiation Technology, Inc. site (the Site) located in Rockaway Township, Morris County, New Jersey.

The Remedy was selected in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the Administrative Record file for the Site, an index of which can be found in Appendix IV.

The State of New Jersey concurs with the Selected Remedy. A copy of the concurrence letter can be found in Appendix V.

## ASSESSMENT OF THE SITE

The response action selected in this Record of Decision (ROD) is necessary to protect the human health, welfare, or the environment from actual or threatened releases of hazardous substances from the Site into the environment.

## DESCRIPTION OF THE SELECTED REMEDY

The response action described in this document addresses a drum disposal area at the Radiation Technology, Inc. site. A previous ROD, signed in May 1994, addressed groundwater contamination at the Site.

The major component of the Selected Remedy is the following:

- Excavation of drum material and surrounding soils with off-site disposal and/or treatment.

## DECLARATION OF STATUTORY DETERMINATIONS

### Part I: Statutory Requirements

The Selected Remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the remedial action to

the extent practicable, and is cost-effective. The Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner for the drum disposal area at the Site.

**Part 2: Statutory Preference for Treatment**
The Remedy meets the statutory preference for the use of remedies that involve treatment as a principal element.

**Part 3: Five-Year Review Requirements**
Because the Remedy will not result in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure, EPA anticipates that a five-year review will not be required for the drum disposal remedy.

## ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this Site.

- Chemicals of concern and their respective concentrations may be found in the "Site Characteristics" section.
- A discussion of source materials constituting principal threats may be found in the "Principal Threat Waste" section.
- A discussion of the baseline risk represented by the chemicals of concern may be found in the "Summary of Site Risks" section. This discussion is based on the human health risk assessment from the 2010 Remedial Investigation report. Cleanup goals for soils can be found in the "Remedial Action Objectives" section.
- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment and ROD can be found in the "Current and Potential Future Site and Resource Uses" section.
- Estimated capital, operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected can be found in the "Description of Remedial Alternatives" section.
- Key factors that led to selecting the remedy may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

Walter E. Mugdan, Director
Emergency & Remedial Response Division
EPA - Region II

Sept. 19, 2011
Date

# RECORD OF DECISION

# DECISION SUMMARY

## Radiation Technology, Inc. Site

Rockaway Township, Morris County, New Jersey

U.S. Environmental Protection Agency
Region II
New York, New York

September 2011
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Appendices

## SITE NAME, LOCATION AND DESCRIPTION

The Radiation Technology, Inc. (RTI) site (the Site) is located near the small residential community of Lake Telemark, New Jersey in the western portion of Morris County. The Site is located approximately 5 miles north of Exit 37 off U.S. Interstate 80 and has an address of 108 Lake Denmark Road, Rockaway Township, New Jersey. The Site location is depicted on Figure 1. A Site Plan is presented as Figure 2.

The entire Site consists of approximately 263 acres of land which is comprised of three distinct areas: the active former RTI complex (15 acres), the former Rockaway Industrial Park (RIP) (65 acres), and undeveloped land (183 acres) adjacent to those areas (Figure 3).

Past activities at the Site have included the testing and development of rocket motors and propellants. More recent operations included irradiating food, cosmetics, and medical devices to sterilize them. Buildings in the RIP area have been vacant since 2006 and are in various stages of disrepair and/or disintegration.

The area around the Site is generally low-density residential in nature. However, there has been significant residential and industrial development in the region. To the west of the Site, on the other side of Lake Denmark, significant heavy industrial activities have been ongoing at the Army and Navy portions of the Picatinny Military Arsenal facilities since the early 1900s. Areas to the east of the Site consist mainly of single-family residences situated in the population centers mentioned previously.

With the exception of one business, Sterigenics International, the RTI Site is unoccupied.

## SITE CHARACTERISTICS

Prior to 1941, the 263-acre study area was owned by the Singer Manufacturing Company. Reaction Motors, Inc. purchased the property in 1941 and, in approximately 1947, began the construction of facilities to support rocket engine and component testing programs. Reaction Motors, Inc. was acquired by a corporate predecessor to the Olin Corporation in 1953 and thereafter by Thiokol Chemical Corporation (Thiokol) in 1958. In 1964, Reaction Motors was formally combined with Thiokol and became a separate working division within the company (Acres, 1991). During the 1990s, Thiokol was renamed Cordant Technologies, Inc. ("Cordant").

In 1972, RTI purchased a 15-acre parcel of the Site (located northwest of Lake Denmark Road) where it conducted irradiation activities until it sold this operation to Sterigenics International in 1996. In 1978, RTI purchased the remaining 248 acres of the Site from Thiokol and leased portions of this property to various tenants. In November 1999, RTI, Inc. filed for Chapter 11 bankruptcy and there has been no financially solvent owner of the Site since that time. Although RTI was no longer an active owner of the property, various tenants remained in the P-2, South Stand, and East Stand areas of the Site until 2006 when the United States Environmental Protection Agency (EPA) took control of the

Site and Rockaway Township evicted the tenants from the property. The vacant property east of Lake Denmark Road was secured to prevent public access and signs were posted indicating the area was a federal Superfund Site, however, there has been evidence of trespassers. Sterigenics International continues to operate on the RTI portion of the Site (west of Lake Denmark Road).

In 2001, Alliant Techsystems, Inc. (ATK) acquired Cordant. In 2004, ATK and EPA entered into an Administrative Order on Consent for Operable Unit 2 to conduct a remedial investigation/feasibility study for potential sources of groundwater contamination at the Site.

**Previous Remedy Selection**

On May 9, 1994, EPA issued a Record of Decision (ROD) for Operable Unit 1, which selected the following remedial action objectives for the Site:

- Restore the contaminated groundwater plume to levels below federal and state Maximum Contaminant Levels (MCLs).
- Restore the groundwater to its beneficial use, which is a drinking water aquifer.

These goals would be achieved by the following remedial action components:

- Extraction of contaminated groundwater above the cleanup standards;
- Treatment of the extracted groundwater via air stripping and carbon adsorption;
- Reinjection of the treated groundwater; and
- Appropriate environmental monitoring to ensure the effectiveness of the remedy.

The ROD stated that the goal of the groundwater remedy was to restore the contaminated groundwater to levels below the more stringent of the federal and state MCLs (1 ppb) established by the Safe Drinking Water Act to prevent adverse health effects.

## CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The area around the Site is generally low-density residential in nature. To the west of the Site, on the other side of Lake Denmark, significant heavy industrial activities have been ongoing at the Army and Navy portions of the Picatinny Military Arsenal facilities since the early 1900s. Areas to the east of the Site consist mainly of single-family residences situated in the population centers mentioned previously. With the exception of one business, Sterigenics International, the RTI Site is unoccupied. The property is zoned commercial, which leaves open the possibility for redevelopment in the future.

## SUMMARY OF SITE RISKS

As part of the Remedial Investigation/Feasibility Study, EPA conducted a baseline risk assessment to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes a human health risk assessment and an ecological risk assessment. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for the Site.

### Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario: *Hazard Identification* – uses the analytical data collected to identify the contaminants of potential concern at the Site for each medium, with consideration of a number of factors explained below; *Exposure Assessment* - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., incidental ingestion of drum material and soil) by which humans are potentially exposed; *Toxicity Assessment* - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and *Risk Characterization* - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also identifies contamination with concentrations which exceed acceptable levels, defined by the National Contingency Plan (NCP) as an excess lifetime cancer risk greater than $1 \times 10^{-6}$ to $1 \times 10^{-4}$, an excess of lifetime cancer risk greater than $1 \times 10^{-6}$ (i.e., point of departure) combined with site-specific circumstances, or a Hazard Index greater than 1.0; contaminants at these concentrations are considered chemicals of concern (COCs) and are typically those that will require remediation at the Site. Also included in this section is a discussion of the uncertainties associated with these risks.

### Hazard Identification

In this step, the chemicals of potential concern (COPCs) in each medium were identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations, mobility, persistence, and bioaccumulation. The risk assessment focused on exposure to soil, surface water and sediment, and drum materials which may pose significant risk to human health. Analytical information that was collected to determine the nature and extent of contamination revealed the presence of several metals in the drum materials and surrounding soil at concentrations of potential concern.

A comprehensive list of all COPCs can be found in the baseline human health risk assessment (BHHRA), entitled "Remedial Investigation Report – Operable Unit 2 –

Radiation Technology, Inc. Superfund Site". This document is available in the Administrative Record file. This ROD focuses on Operable Unit 2, which evaluated exposure to soil across the entire site, surface water and sediment, and exposure to drum materials and surrounding soil. The drum material and surrounding soil were the only media with risks and hazards that exceeded acceptable values; therefore, only the COCs, or those chemicals requiring remediation at the Site, related to drum materials and the surrounding soil are listed in Table 1. Buildings found on-site continue to be evaluated and may be addressed as a future operable unit.

Exposure Assessment

Consistent with Superfund policy and guidance, the BHHRA is a baseline human health risk assessment and therefore assumes no remediation or institutional controls to mitigate or remove hazardous substance releases. Cancer risks and noncancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site. For those contaminants for which the risk or hazard exceeded the acceptable levels, the central tendency estimate (CTE), or the average exposure, was also evaluated.

With the exception of one business, Sterigenics International, the RTI Site is unoccupied. It is anticipated that the future land use for this area will remain consistent with its current use. The potential use of the Site for residential development is unknown; therefore, a future use that evaluated residential use was also considered in the risk assessment. The (BHHRA) evaluated potential risks to populations associated with both current and potential future land uses.

Exposure pathways were identified for each potentially exposed population and each potential exposure scenario. Potentially exposed populations included trespassers, construction workers and recreational users. Exposure pathways assessed in the BHHRA included incidental ingestion, dermal contact, and inhalation of soil, incidental ingestion and dermal contact of surface water and sediment, and incidental ingestion, dermal contact, and inhalation of drum materials and surrounding soil. A summary of the exposure pathways that was associated with unacceptable risks or hazards in Table 2. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. A summary of the exposure point concentrations for the COCs in drum materials and surrounding soil can be found in Table 1, while a comprehensive list of the exposure point concentrations for all COPCs (i.e., soil over the entire site, surface water and sediment, and drum materials and surrounding soil) can be found in the BHHRA.

Toxicity Assessment

Under current EPA guidelines, the likelihood of carcinogenic risks and noncancer hazards due to exposure to site chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the human health risk assessment were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA's directive on toxicity values. This information for the COCs is presented in Table 3 (noncancer toxicity data summary) and Table 4 (cancer toxicity data summary). Additional toxicity information for all COPCs is presented in the BHHRA.

Risk Characterization

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (e.g., the amount of a chemical ingested from contaminated drinking water) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1.0 indicates that the potential exists for noncarcinogenic health effects to occur as a result of site-related

exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1.0, separate HI values are then calculated for those chemicals which are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1.0 to evaluate the potential for noncancer health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the noncarcinogenic risks associated with these chemicals for each exposure pathway exceeding an HI of 1.0 is contained in Table 5.

It can be seen in Table 5 that the HI for noncancer effects for exposure to drum materials to future residential adults/children and future industrial workers exceeds the acceptable EPA value of 1.0. The contaminants of concern related to the drum material are aluminum, cobalt, copper, iron, manganese, and thallium. Although the noncancer hazard to the future industrial worker is above the acceptable value of 1.0, the target organ breakdown shows that there were no individual chemicals or chemicals that affect the same organ that exceeded the hazard index of 1.0; therefore, it is unlikely that there would be adverse health effects for future industrial workers in the drum area. Similarly, although the noncancer hazard to potential residents due to exposure to surface soils exceeds an HI of 1.0, there are no chemicals that affect the same organ that exceeded the hazard index of 1.0; so there is no unacceptable risk for the residential exposure route for surface soil surrounding the drums. The contaminants of concern in the surface soil surrounding the drums included cobalt, iron, and manganese.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability ($1 \times 10^{-6}$) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as $1 \times 10^{-4}$). An excess lifetime cancer risk of $1 \times 10^{-4}$ indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the assessment. Again, as stated in the National Contingency Plan, the point of departure is $10^{-6}$ and the acceptable risk range for site-related exposure is $10^{-6}$ to $10^{-4}$.

Results of the BHHRA presented in Table 6 indicate that exposure to drum materials for future residential adult and children exceed the acceptable EPA cancer risk range of $1 \times 10^{-6}$ to $1 \times 10^{-4}$ due to exposure to arsenic in the drum material.

In summary, metals detected in the drum material contribute to unacceptable noncancer hazards and cancer risks to residential populations that may use the Site in the future. The response action selected in the Record of Decision is necessary to protect the human health or welfare of the environment from actual or threatened releases of contaminants into the environment.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

•environmental chemistry sampling and analysis
•environmental parameter measurement
•fate and transport modeling
•exposure parameter estimation
•toxicological data.

The primary uncertainty with the calculated risks and hazards for this Site were associated with soil ingestion rates, fraction ingested, and exposure duration. Many of the contaminants of concern are also trace elements which are known to be poorly absorbed by the gut. This may have overestimated the risks and hazards. The values used for the fraction of soil ingested and the exposure duration were conservative values that also may have resulted in overestimation of the risks and hazards.

More specific information concerning human health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways is presented in the baseline human health risk assessment report.

Ecological Risk Assessment

A screening-level ecological risk assessment was conducted to evaluate the potential for ecological effects from exposure to soil, surface water and sediment. Soil, surface water, and sediment concentrations were compared to ecological screening values as an indicator of the potential for adverse effects to ecological receptors. Exposure was also evaluated for terrestrial and aquatic wildlife species through the ingestion of prey and direct soil ingestion. A complete summary of all exposure scenarios can be found in the screening level ecological risk assessment (SLERA).

*Initial Screening:* The initial steps in the SLERA identified thirteen COPCs (i.e., antimony, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, zinc, and total high-molecular weight (HMW) polyaromatic hydrocarbons (PAHs)) for terrestrial plants and soil invertebrates, with hazard quotients (HQs) ranging from 2.6 to 74, eight COPCs (i.e., barium, cadmium, chromium, copper, lead, manganese, vanadium, and zinc) for aquatic plants and animals, with HQs ranging

from 1.1 to 118, and ten COPCs (i.e., antimony, arsenic, barium, cadmium, cobalt, copper, lead, mercury, selenium, and zinc) in benthic invertebrates, with HQs ranging from 1.1 to 82, through comparing site concentrations to protective screening values.

In addition, there were twelve COPCs (i.e., barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, zinc, and total HMW PAHs identified for avian wildlife (i.e., American robin and American kestrel), with HQs ranging from 1.1 to 869, and thirteen COPCs (i.e., antimony, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, zinc, and total HMW PAHs for the meadow vole, short-tailed shrew, and Eastern cotton tail, seven COPCs (i.e., antimony, chromium, copper, lead, manganese, vanadium, with HQs ranging from 1.5 to 364, and total HMW PAHs) for the red fox, with HQs ranging from 1.1 to 38, and seven COPCs (i.e., antimony, arsenic, cadmium, copper, lead, manganese, and selenium) for the American mink, with HQs ranging from 1.5 to 103, based on comparison of food-web modeled concentrations to protective screening values.

*Refinement:* After the initial screening step in the SLERA, the evaluation proceeded to the next step which included refining the exposure assumptions, exposure concentrations, comparison values, and background concentrations to provide a more realistic assessment of potential risk to ecological receptors at the Site. The results of the next step of the SLERA identified six COPCs (i.e., chromium, manganese, mercury, selenium, vanadium, and zinc) for terrestrial plants, with HQs ranging from 1.3 to 124, five COPCs (i.e., chromium, manganese, mercury, vanadium, and zinc) for soil invertebrates, with HQs ranging from 1.8 to 309, two COPCs (i.e., barium and manganese) for aquatic plants and animals, with HQs ranging from 4.5 to 23, and five COPCs (i.e., antimony, barium, cobalt, mercury, and selenium) for benthic invertebrates, with HQs ranging from 1.2 to 4.2.

The compounds identified in the preceding paragraph were then compared to background concentrations. All of the compounds (i.e., barium, cobalt, chromium, manganese, mercury, selenium, vanadium, and zinc) except for antimony and selenium in sediment were determined to have concentrations that were similar to background, which indicates that they would not be considered as COCs for the Site. Antimony and selenium were both infrequently detected and were present, when detected, at concentrations near the screening values (i.e., HQs very close to 1.0); therefore, these compounds are not considered COCs for the Site.

The refinement of the food-web model parameters identified seven COPCs (i.e., chromium, copper, lead, manganese, vanadium, zinc, and total HMW PAHs) for the American robin when using the no observed adverse effect level (NOAEL), with HQs ranging from 1.5 to 20 and two COPCs (i.e., chromium and vanadium) when using the lowest observed adverse effect level (LOAEL), with HQs ranging from 1.7 to 2.1. This indicates that there may be adverse effect to avian species, using the American robin as a surrogate, due to chromium and vanadium. These compounds were further evaluated by comparing the concentrations to background concentrations. Chromium and vanadium were determined to have concentrations which were similar to background, which

indicates that they would not be considered COCs. There were also six COPCs (i.e., antimony, cadmium, chromium, lead, manganese, and total HMW PAHs) identified for the short-tailed shrew when using the NOAEL, with HQs ranging from 1.3 to 6.6, however, there were no COPCs identified when using the LOAEL, which indicates that impacts to short-tailed shrews are unlikely. There were no COPCs identified for the remaining ecological receptors (i.e., meadow vole, Eastern cottontail, red fox, or American mink) during the refinement step.

Summary

The results of the SLERA indicate that concentrations of contaminants detected in soil, surface water, and sediment at the Site are unlikely to pose any unacceptable risks to terrestrial or aquatic ecological receptors at the Site.

## REMEDIAL ACTION OBJECTIVES

This section defines the goals of the remedial action, and identifies the remedial action objectives (RAOs) for drum contents in the drum disposal area located in the RTI portion of the Site. RAOs consist of quantitative goals for reducing human health and environmental risks and/or meeting established regulatory requirements at Superfund sites. Reviewing site characterization data, human health risk assessment results, applicable or relevant and appropriate requirements (ARARs), and other relevant site information identifies RAOs. Based on current site data and evaluations of potential risk, arsenic and six metals (aluminum, cobalt, copper, iron, manganese, and thallium) were identified as being contaminants of potential concern and the primary cause of human health risk at the Site.

One RAO has been developed for the RTI Site:

- Reduce or eliminate direct contact risks associated with contaminated drum material and associated contaminated soil to levels protective for residential use.

To achieve this RAO, cleanup goals were developed for the Site based on state-promulgated ARARs.

## DESCRIPTION OF REMEDIAL ALTERNATIVES

The Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601 et seq., requires that each remedial alternative be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. In addition, CERCLA includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility or volume of hazardous substances.

CERCLA requires that if a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA must review the action no less than every five years after initiation of the action. In addition, institutional controls (e.g., a deed notice, an easement or a covenant) to limit the use of portions of the property may be required. These use restrictions are discussed in each alternative as appropriate. The time frames below for construction do not include the time for remedial design or the time to procure contracts.

**Alternative 1: No action**

Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction Time frame: None

Superfund regulations require that a "no action" alternative be evaluated to establish a baseline for comparison to other alternatives. Under this alternative, EPA would take no action at the Site to prevent exposure to contaminated drum material. Since this alternative would result in contaminants remaining on the Site above levels that would not allow for unlimited use, a review of the Site at least every five years would be required.

**Alternative 2: Excavation of Drum Material, with Off-Site Disposal and/or Treatment**

Estimated Capital Cost: $196,000
Estimated Annual O & M Cost: $4,000
Estimated Present Worth Cost: $200,000
Estimated Construction Time frame: 1 month
Estimated Time to Achieve RAOs: 1 month

Under this alternative, contaminated drum material in the drum disposal area would be excavated and transported off site for disposal and/or treatment. Following excavation of the drum material, soils adjacent to the excavated drum material will be sampled to determine if they are above the cleanup goals. If the sampling results indicate that the soils are above cleanup goals, they will be excavated and disposed and/or treated off-site. In addition, any debris that is comingled with the contaminated drum material will be removed, disposed and/or treated off-site. Following source remediation, areas disturbed by excavation activities will be re-vegetated and restored to pre-excavation conditions.

## COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy, EPA considered the factors set out in CERCLA §121, 42 U.S.C. §9621, by conducting a detailed analysis of the viable remedial response measures pursuant to the NCP, 40 CFR §300.430(e)(9) and OSWER Directive 9355.3-01. The

detailed analysis consisted of an assessment of the individual response measure against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each response measure against the criteria.

***Threshold Criteria*** *- The first two criteria are known as "threshold criteria" because they are the minimum requirements that each response measure must meet in order to be eligible for selection as a remedy.*

1. **Overall Protection of Human Health and the Environment**

*Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or institutional controls.*

Alternative 1, "no action," will not provide adequate protection of human health and the environment. Alternative 2 (excavation of drum material with off-site disposal and/or treatment) will remove the contaminated material in the drum disposal area. Therefore, Alternative 2 is considered to be protective of human health and the environment.

Because the "no action" alternative is not protective of human health and the environment, it was eliminated from consideration under the remaining eight criteria.

2. **Compliance with applicable or relevant and appropriate requirements (ARARs)**

*Section 121(d) of CERCLA and NCP §300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4).*

*Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those state standards that are identified in a timely manner and that are more stringent than federal requirements may be relevant and appropriate.*

*Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes or provides a basis for invoking a waiver.*

Actions taken at any Superfund site must meet all ARARs for federal and state law or provide grounds for invoking a waiver of these requirements. These include chemical-specific, location-specific, and action-specific ARARs. Alternative 2 would attain site-specific, risk-based soil cleanup goals and would meet all chemical, location and action-specific ARARs. The cleanup goals for metals found in the contaminated material in the drum disposal area were derived from the New Jersey Direct Contact Soil Remediation Standard and are listed for each contaminant of concern in Table 7.

Tables 8.1 through 8.3 show which standards are ARARs and which are To-Be-Considered, including Resource Conservation and Recovery Act (RCRA) transportation and disposal requirements.

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***Primary Balancing Criteria*** *- The next five criteria, criteria 3 through 7, are known as "primary balancing criteria". These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given site-specific data and conditions.*

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3. **Long-term Effectiveness and Permanence**

*A similar degree of long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain on-site following remediation and the adequacy and reliability of controls.*

Alternative 2 would be permanent and effective since it removes the contaminated drum material and associated soils from the Site.

4. **Reduction of Toxicity, Mobility, or Volume of contaminants through Treatment**

*Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.*

Alternative 2 would reduce mobility of the contaminants in the drum material through excavation of contaminated drum material and disposal at a facility regulated under RCRA, and would reduce toxicity if treated at such a facility.

5. **Short-term Effectiveness**

*Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community and the environment during construction and operation of the remedy until cleanup levels are achieved.*

Alternative 2 would present a potential short-term risk because of the potential for exposure to contaminated drum material during excavation and off-site transportation. Air monitoring, engineering controls and the appropriate use of personal protective equipment for workers would be effective means to protect the community and workers.

6. **Implementability**

*Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.*

There are no administrative feasibility issues associated with Alternative 2. Alternative 2 may require water management during excavation activities. Resources for implementation of Alternative 2 are readily available and are, therefore, not expected to present a challenge to remedy implementation.

7. **Cost**

*Includes estimated capital and operation and maintenance costs, and net present-worth values.*

The estimated present worth cost of Alternative 2 is $200,000.

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***Modifying Criteria** - The final two evaluation criteria, criteria 8 and 9, are called "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may modify the preferred response measure or cause another response measure to be considered.*

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8. **State Acceptance**

*Indicates whether based on its review of the Remedial Investigation/Focused Feasibility Study reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected response measure.*

The State of New Jersey concurs with EPA's Selected Remedy.

9. **Community Acceptance**

*Summarizes the public's general response to the response measures described in the Proposed Plan and the Remedial Investigation/Focused Feasibility Study reports. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about.*

EPA solicited input from the community on the remedial alternatives proposed for the drum disposal area at the Site. The community was supportive of EPA's Proposed Plan. Appendix III, The Responsiveness Summary, addresses the comments received from the public.

## PRINCIPAL THREAT WASTE

Principal threat wastes are considered source materials, i.e., materials that include or contain hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or as a source for direct exposure. At this Site, principal threat waste consists of source material which is defined as material that includes or contains hazardous substances, pollutants or contaminants that act as a source for direct exposure. The waste material to be addressed by the response action contains elevated levels of heavy metals which, if not remediated, would continue to be a direct exposure risk. Therefore, all identified principal threat wastes at the Site will be addressed by the Selected Remedy.

## SELECTED REMEDY

Based upon consideration of the results of EPA's investigations at the Site, the requirements of CERCLA, the detailed analysis of the remedial alternatives and public comments, EPA has determined that Alternative 2 is the appropriate remedy to address drum material and associated soil contamination at the Site. This remedy best satisfies the requirements of CERCLA Section 121 and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR §300.430 (e) (9). This remedy consists of the following:

- Excavation of drum material and surrounding soils with off-site disposal and/or treatment.

Based on all available information, EPA and the State of New Jersey believe the Selected Remedy provides the best balance of trade-offs among the response measures with respect to the nine evaluation criteria. EPA believes that the Selected Remedy will be protective of human health and the environment, will comply with ARARs, will be cost effective, and will utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

Consistent with EPA Region 2's "Clean and Green" policy, EPA will evaluate the use of sustainable technologies and practices with respect to any remedial alternative selected for the Site.

## STATUTORY DETERMINATIONS

As previously noted, CERCLA Section 121(b)(1) mandates that a remedial action must be protective of human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. CERCLA Section 121(b)(1) also establishes a preference for remedial actions that employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA Section 121(d) further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4). For the reasons discussed below,

EPA has determined that the Selected Remedy meets the requirements of CERCLA Section 121.

**Protection of Human Health and the Environment**

The Selected Remedy will adequately protect human health and the environment through excavation of drums and contaminated soils. The Selected Remedy will remove soils that will result in the reduction of exposure levels of direct contact to acceptable risk levels within EPA's generally acceptable risk range of $10^{-4}$ to $10^{-6}$. Implementation of the Selected Remedy will not pose unacceptable short-term risks or adverse cross-media impacts. Contaminated groundwater is currently addressed under a ROD for Operable Unit 1.

**Compliance with ARARs**

The Selected Remedy would comply with the chemical- and location-specific ARARs identified in Tables 8.1 and 8.2. The potential federal and state action-specific ARARs for the Selected Remedy are identified in Table 8.3. The principal action-specific ARARs for the Selected Remedy are the requirements for characterization, transportation and proper disposal and/or treatment of the excavated material.

**Cost-Effectiveness**

In EPA's judgment, the Selected Remedy is cost-effective and represents reasonable value for the money to be spent. Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness. The overall effectiveness of the Selected Remedy has been determined to be proportional to the costs, and the Selected Remedy, therefore, represents reasonable value for the money to be spent. The estimated present worth cost of the Selected Remedy is approximately $200,000.

**Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable**

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Site. EPA has determined that the Selected Remedy provides the better balance of trade-offs with respect to the five balancing criteria. The Selected Remedy satisfies the criteria for long-term effectiveness and permanence by removing drums and associated contaminated soils.

The Selected Remedy presents a potential short-term risk because of the potential for exposure associated with the excavation and transportation of drums and associated contaminated soils. However, any short-term risk will be mitigated through implementation of measures such as engineering controls, use of personal protective equipment, safe work practices and perimeter air monitoring.

The Selected Remedy is implementable since it employs standard technologies that are readily available.

**Preference for Treatment as a Principal Element**

Through the use of excavation and off-site disposal, including any required treatment, the Selected Remedy meets the statutory preference for the use of remedies that employ treatment that reduces toxicity, mobility or volume as a principal element to address the principal threats at the Site. The quantity of material is too small to warrant consideration of on-site treatment.

**Five-Year Review Requirements**

Because the remedy will not result in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure, EPA anticipates that a five-year review will not be required for this drum and contaminated soil remedy.

## HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Proposed Plan and supporting documentation were released to the public for comment on April 13, 2011. These documents were made available to the public at the EPA Administrative Record File Room, 290 Broadway, 18$^{th}$ Floor, New York, New York and the Rockaway Township Free Public Library, Rockaway, NJ.

On April 13, 2011, EPA issued a notice in the Daily Record and local newspapers which contained information relevant to the public comment period for the Site, including the duration of the comment period, the date of the public meeting and availability of the administrative record. A Superfund announcement was mailed to individuals on a mailing list maintained by EPA for the Site. The public comment period began on April 13, 2011 and ended on May 13, 2011.

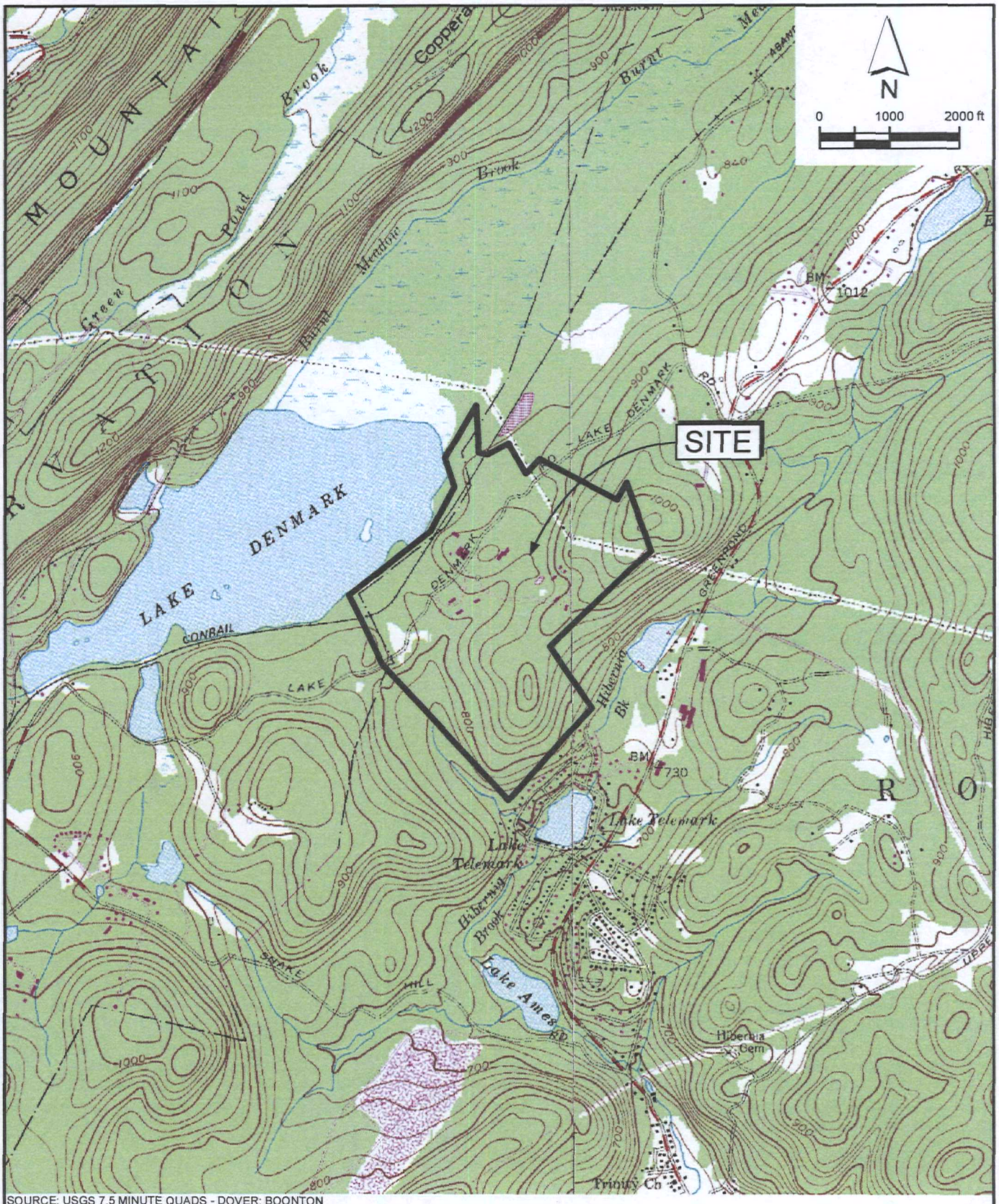
EPA held a public meeting on April 21, 2011 to explain the preferred remedy, excavation and off-site disposal and/or treatment of drum and related contaminated soil material. The purpose of the meeting was to inform local officials and interested citizens about the Superfund process, to discuss the Proposed Plan and receive comments on the Proposed Plan, and to respond to questions from area residents and other interested parties. Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary, attached as Appendix III to this ROD.

## DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Site was released for public comment on April 13, 2011. The comment period closed on May 13, 2011. All verbal and written comments submitted during the public comment period were reviewed by EPA. Upon review of the comments, it was determined that no changes to the remedy, as originally identified in the Proposed Plan, were necessary.

# APPENDIX I

## Figures




SOURCE: USGS 7.5 MINUTE QUADS - DOVER; BOONTON


figure 1

SITE LOCATION
RTI SUPERFUND SITE
*Rockaway Township, New Jersey*

4354-34(MISC016)GIS-SP001 JUN 29/2011

500024

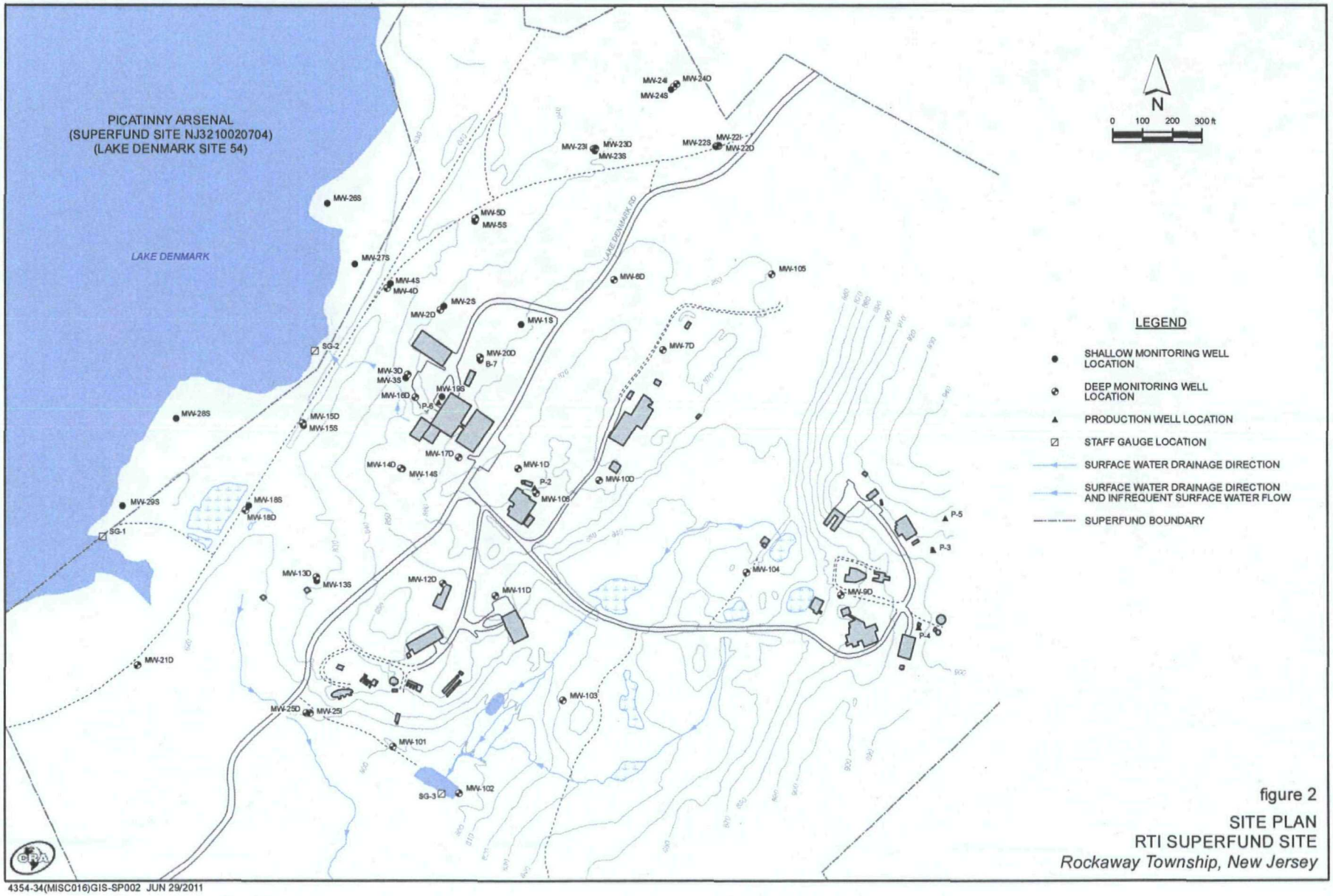



figure 2

SITE PLAN
RTI SUPERFUND SITE
*Rockaway Township, New Jersey*

4354-34(MISC016)GIS-SP002 JUN 29/2011

500025


figure 3

SITE AREAS
RTI SUPERFUND SITE
*Rockaway Township, New Jersey*

4354-34(MISC016)GIS-SP003 JUN 29/2011

500026

# APPENDIX II

## Tables

# TABLE 1
## Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

**Scenario Timeframe:** Future
**Medium:** Drum material
**Exposure Medium:** Drum material

| Exposure Point | Chemical of Concern | Concentration Detected | | Concentration Units | Frequency of Detection | Exposure Point Concentration (EPC) | EPC Units | Statistical Measure |
|---|---|---|---|---|---|---|---|---|
| | | Min | Max | | | | | |
| Drum material | Aluminum | 177 | 495,000 | mg/kg | 9/10 | 495,000 | mg/kg | Max. |
| | Cobalt | 3.1 | 65 | mg/kg | 9/10 | 65 | mg/kg | Max. |
| | Copper | 37 | 18,500 | mg/kg | 10/10 | 18,500 | mg/kg | Max. |
| | Iron | 17,000 | 689,000 | mg/kg | 10/10 | 689,000 | mg/kg | Max. |
| | Manganese | 195 | 3,400 | mg/kg | 10/10 | 3,400 | mg/kg | Max. |
| | Nickel | 12.8 | 4,860 | mg/kg | 10/10 | 4,860 | mg/kg | Max. |
| | Thallium | 1.3 | 53 | mg/kg | 6/10 | 53 | mg/kg | Max. |
| | Arsenic | 2.2 | 72 | mg/kg | 8/10 | 72 | mg/kg | Max. |

Max. – Maximum Detected Concentration

***Scenario Timeframe:*** ***Future***
**Medium:** **Surface soil**
***Exposure Medium:*** ***Surface soil***

| Exposure Point | Chemical of Concern | Concentration Detected | | Concentration Units | Frequency of Detection | Exposure Point Concentration (EPC) | EPC Units | Statistical Measure |
|---|---|---|---|---|---|---|---|---|
| | | Min | Max | | | | | |
| Surface soil | Cobalt | 6.4 | 14 | mg/kg | 3/3 | 14 | mg/kg | Max. |
| | Iron | 16,000 | 21,000 | mg/kg | 3/3 | 21,000 | mg/kg | Max. |
| | Manganese | 99 | 460 | mg/kg | 3/3 | 460 | mg/kg | Max. |

Max. – Maximum Detected Concentration

**Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations**

This table presents the chemicals of concern (COCs) and exposure point concentrations (EPCs) for each of the COCs detected in drum materials and surrounding surface soil (i.e., the concentration that will be used to estimate the exposure and risk from each COC). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC and how it was derived.

# TABLE 2
# SELECTION OF EXPOSURE PATHWAYS

| Scenario Timeframe | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | On-Site/ Off-Site | Type of Analysis | Rationale for Selection or Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|---|
| Future | Drum Area | Drum Area | Drum material | Residents | Adult/Child | Ingestion/Dermal/ Inhalation | Off-site | Quant | Future residents may be exposed to drum material. |
| | | | | Industrial Worker | Adult | Ingestion/Dermal/ Inhalation | On-site | Quant | Industrial workers Future residents may be exposed to drum material. |
| | | | Surface soil | Residents | Adult/Child | Ingestion/Dermal/ Inhalation | Off-site | Quant | Future residents may be exposed to surrounding surface soil. |
| | | | | Industrial Worker | Adult | Ingestion/Dermal/ Inhalation | On-site | Quant | Industrial workers Future residents may be exposed to surrounding surface soil. |

Quant = Quantitative risk analysis performed.

## Summary of Selection of Exposure Pathways

The table describes the exposure pathways associated with the drum material and surrounding surface soil that were evaluated for the risk assessment, and the rationale for the inclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are included.

# TABLE 3

## Non-Cancer Toxicity Data Summary

**Pathway:** Oral/Dermal

| Chemical of Concern | Chronic/ Subchronic | Oral RfD Value | Oral RfD Units | Absorp. Efficiency (Dermal) | Adjusted RfD ( Dermal) | Adj. Dermal RfD Units | Primary Target Organ | Combined Uncertainty /Modifying Factors | Sources of RfD: Target Organ | Dates of RfD: |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | Chronic | 1.0E+0 | (mg/kd-day) | 1 | 1.0E+0 | (mg/kd-day) | CNS | 100/3 | PPRTV | 7/26/01 |
| Cobalt | Chronic | 3.0E-4 | (mg/kd-day) | 1 | 3.0E-4 | (mg/kd-day) | NA | 10/1 | PPRTV | |
| Copper | Chronic | 4.0E-2 | (mg/kd-day) | 1 | 4.0E-2 | (mg/kd-day) | GI | 1000/1 | HEAST | 1997 |
| Iron | NA | 7.0E-1 | (mg/kd-day) | 1 | 7.0E-1 | (mg/kd-day) | NA | NA/NA | PPRTV | 6/16/05 |
| Manganese | Chronic | 2.4E-2 | (mg/kd-day) | 0.04 | 9.6E-4 | (mg/kd-day) | CNS | 1/1 | IRIS | 1/10/09 |
| Nickel | Chronic | 2.0E-2 | (mg/kd-day) | 0.04 | 8.0E-4 | (mg/kd-day) | NA | 300/1 | IRIS | 1/10/09 |
| Thallium | Chronic | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Pathway:** Inhalation

| Chemical of Concern | Chronic/ Subchronic | Inhalation RfC | Inhalation RfC Units | Inhalation RfD | Inhalation RfD Units | Primary Target Organ | Combined Uncertainty /Modifying Factors | Sources of RfD: Target Organ | Dates: |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | Chronic | 5.0E-3 | $mg/m^3$ | 1.4E-3 | mg/kg-day | Respiratory system | 300/1 | PPRTV | 7/26/01 |
| Cobalt | Chronic | 6.0E-6 | $mg/m^3$ | 1.7E-6 | mg/kg-day | Lungs | 100/1 | PPRTV | |
| Copper | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Iron | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Manganese | Chronic | 5.0E-5 | $mg/m^3$ | 1.4E-5 | mg/kg-day | CNS | 1000/1 | IRIS | 1/10/09 |
| Nickel | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Thallium | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

**Key**

na: No information available
IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment
HEAST: Health Effects Assessment Summary Tables
EPA: Environmental Protection Agency
CNS: Central Nervous System
GI: Gastrointestinal tract

### Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern in drum material and surface soil. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference doses (RfDi).

# TABLE 4

## Cancer Toxicity Data Summary

**Pathway:** Oral/Dermal

| Chemical of Concern | Oral Cancer Slope Factor | Units | Adjusted Cancer Slope Factor (for Dermal) | Slope Factor Units | Weight of Evidence/ Cancer Guideline Description | Source | Date |
|---|---|---|---|---|---|---|---|
| Arsenic | 1.5E+00 | $(mg/kg/day)^{-1}$ | 1.5E+00 | $(mg/kg/day)^{-1}$ | A | IRIS | 4/2004 |

**Key:**

CalEPA – California Environmental Protection Agency
EPA – U.S. Environmental Protection Agency
IRIS: Integrated Risk Information System. U.S. EPA
na: No information available

**EPA Weight of Evidence:**

A - Human carcinogen
B1 - Probable Human Carcinogen-Indicates that limited human data are available
B2 - Probable Human Carcinogen-Indicates sufficient evidence in animals associated with the site and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E- Evidence of noncarcinogenicity
2A - Probable human carcinogen
2B - Possible human carcinogen

**Summary of Toxicity Assessment**

This table provides carcinogenic risk information which is relevant to the contaminants of concern in drum material.

# TABLE 5

## Risk Characterization Summary - Noncarcinogens

**Scenario Timeframe:** Future
**Receptor Population:** Resident
**Receptor Age:** Adult/Child

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Dermal | Inhalation | Exposure Routes Total |
| Drum material | Drum material | Drum material | Aluminum | CNS | 6.4 | ----- | ----- | 6.4 |
| | | | Cobalt | NA | 2.8 | ----- | ----- | 2.8 |
| | | | Copper | GI | 6 | ----- | ----- | 6 |
| | | | Iron | NA | 13 | ----- | ----- | 13 |
| | | | Manganese | CNS | 1.9 | ----- | ----- | 1.9 |
| | | | Thallium | LDH | 10 | ----- | ----- | 10 |
| | | | | | | | **Hazard Index Total** | 41.1 |

**Scenario Timeframe:** Future
**Receptor Population:** Resident
**Receptor Age:** Adult/Child

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Dermal | Inhalation | Exposure Routes Total |
| Surface soil | Surface soil | Surface soil | Cobalt | NA | 0.6 | ----- | ----- | 0.6 |
| | | | Iron | NA | 0.4 | ----- | ----- | 0.4 |
| | | | Manganese | CNS | 0.3 | ----- | ----- | 0.3 |
| | | | | | | | **Hazard Index Total** | 1.3 |

**Scenario Timeframe:** Future
**Receptor Population:** Industrial Worker
**Receptor Age:** Adult

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Dermal | Inhalation | Exposure Routes Total |
| Drum material | Drum material | Drum material | Aluminum | CNS | 0.5 | ----- | ----- | 0.5 |
| | | | Cobalt | NA | 0.2 | ----- | ----- | 0.2 |
| | | | Copper | GI | 0.5 | ----- | ----- | 0.5 |
| | | | Iron | NA | 1 | ----- | ----- | 1 |
| | | | Manganese | CNS | 0.2 | ----- | ----- | 0.2 |
| | | | Nickel | NA | 0.07 | ----- | ----- | 0.07 |
| | | | Thallium | LDH | 0.8 | ----- | ----- | 0.8 |
| | | | | | | | **Hazard Index Total** | 3.3 |

Inhalation – Inhalation of dust particles

CNS – Central Nervous System
GI – Gastrointestinal Tract
LDH – lactate dehydrogenase activity
NA – not available

**Summary of Risk Characterization - Non-Carcinogens**

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure for drum materials and surrounding surface soil. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse non-cancer effects.

# TABLE 6

## Risk Characterization Summary - Carcinogens

**Scenario Timeframe:** Future
**Receptor Population:** Resident
**Receptor Age:** Adult/Child

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Dermal | Inhalation | Exposure Routes Total |
| Drum material | Drum material | Drum material | Arsenic | 1.8E-04 | ----- | ----- | 1.8E-04 |
| | | | | | | **Total Risk =** | 1.8E-04 |

Inhalation – Inhalation of dust particles

**Summary of Risk Characterization - Carcinogens**

The table presents cancer risks for drum materials for all routes of exposure combined. As stated in the National Contingency Plan, the point of departure is $10^{-6}$ and the acceptable risk range for site-related exposure is $10^{-6}$ to $10^{-4}$.

TABLE 7

CLEANUP GOALS FOR RESIDENTS
DRUM CONTENTS AREA SURFACE SOIL
RTI SUPERFUND SITE, ROCKAWAY TOWNSHIP, NEW JERSEY

| *Receptor* | *COC* | *Maximum Concentration of the Drum Contents (mg/kg)* | *NJ Residential Direct Contact Soil Remediation Standard (mg/kg)* |
|---|---|---|---|
| Resident | Aluminum | 495,000 | 78,000 |
| | Arsenic | 72 | 19 |
| | Cobalt | 65 | 1,600 |
| | Copper | 18,500 | 3,100 |
| | Iron | 689,000 | None |
| | Manganese | 3,400 | 11,000 |
| | Thallium | 53 | 5 |

Notes:

None - No published value

TABLE 8.1

CHEMICAL-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| **Federal** | | | | | |
| Soil Contamination | OSWER Guidance for Developing Ecological Soil Screening Levels | OSWER 9285.7.55 | Guidance for deriving risk based eco-SSLs for soil contaminants of ecological concern. | TBC | May be used to screen soil contaminants to determine if further ecological study is warranted. |
| Soil Contamination | OSWER Soil Screening Guidance | OSWER 9285.7.55 | Guidance for developing site specific soil screening levels. | TBC | May be used to identify areas of soil contamination. |
| **State** | | | | | |
| Soil Contamination | Remediation Standards Rule | NJAC 7:26D | Establishes minimum remediation standards for direct contact in ingestion/dermal exposure to soil. | ARAR | ARAR for soil remediation criteria where more stringent than federal risk standards. |

TABLE 8.2

LOCATION-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| **Federal** | | | | | |
| Floodplains | Executive Order 11988- | 40 CFR 6, Subpart A; | Activities taking place within floodplains must be done to avoid adverse impacts and preserve beneficial values in floodplains. | TBC | Pertinent to activities that may occur within the floodplain. |
| | Floodplain Management | 40 CFR 6.302 | | | |
| Wetlands/Waters of the U.S. | Dredge and Fill in Wetlands | Section 404(b)(1) Guidelines | Discharge of dredge or fill material into wetlands must be evaluated based on specified criteria. | ARAR | Would be applicable to remediation activities impacting jurisdictional wetlands. |
| | Executive Order 11990- Protection of Wetlands | 40 CFR Part 6 Subpart A | Activities taking place within wetlands must be done to avoid adverse impacts. | TBC | Would be applicable to remediation activities impacting jurisdictional wetlands. |
| | Clean Water Act, Section 404(b)(1) Guidelines | 40 CFR 230.10 | Establishes criteria for evaluating impacts to waters of the US (including wetlands) and sets forth factors for considering mitigation measures. | ARAR | Would be applicable for placement of fill material into on-site wetlands. |
| Historic/Cultural Resources | National Historical Preservation Act | 16 CFR 470 | Establishes requirements for the identification and preservation of historic and cultural resources. | ARAR | Would be applicable to the management of historic or archeological artifacts identified on the Site. |
| Floodplains and Wetlands | Policy on Flood plains and Wetlands Assessments for CERCLA Actions | OSWER 9280.0-02, August 1985 | Guidance for Implementing EO 11988 and EO 11990 | TBC | Executive order implementation guidance. |
| Considering Wetlands at CERCLA Sites | Wetlands Protection at CERCLA sites | OSWER 9280.0-03 | Guidance document to be used to evaluate impacts to wetlands at Superfund sites. | TBC | Requirements should be considered when evaluating impacts to jurisdictional wetlands. |
| Critical Habitat | Endangered Species Act and Fish and Wildlife Coordination Act | 16 CFR 661 and 16 U.S.C. 1531 | Actions must be taken to conserve critical habitat in areas where there are endangered or threatened species. | ARAR | Requirements would be applicable if endangered or threatened species are identified on or adjacent to the site. |

TABLE 8.2

LOCATION-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| **State** | | | | | |
| Forests and wetlands | Highlands Water Protection and Planning Act | NJSA 13:20-1 et seq. | Regulates activities potentially impacting forests, wetlands, and surface water within the Highlands Preservation Area. | ARAR | Applicable for site activities occurring within the Highlands Preservation Area. |
| Floodplains | Flood Hazard Area Regulations | NJAC 7:13 | Regulates the placemen of fill, grading, excavation and other disturbances within the defined flood hazard area/floodplain of rivers/streams. | ARAR | Applicable for site activities occurring within the flood hazard area or floodplain of on-site rivers/streams. |
| Wetlands | Freshwater Wetlands Protection Act Rules | NJAC 7:7A | Regulates the disturbance of alteration of freshwater wetlands and their respective buffers. | ARAR | Applicable for site activities disturbing freshwater wetlands and buffer areas. |

TABLE 8.3

ACTION-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| **Federal** | | | | | |
| Generation, Management, and Treatment of Hazardous Waste | Identification and Listing of Hazardous Wastes | 40 CFR Part 261 | Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 40 CFR Parts 260-266. | ARAR | These regulations do not set clean-up standards, but could apply during the management of excavated soils. |
| | Hazardous Waste Determinations | 40 CFR Part 262.11 | Generators must characterize their wastes to determine if the waste is hazardous by listing (40 CFR 261, Subpart D) by characteristic (40 CFR 261, Subpart C) or excluded from regulation (40 CFR 261.4). | ARAR | Excavated soils may be classified as characteristic or listed hazardous wastes. By-products or residues from the treatment of contaminated soils and groundwater must also be characterized. |
| | Manifesting | 40 CFR 262, Subpart B | Generators must prepare a Hazardous Waste Manifest (EPA form 8700-22) for all off-site shipments of hazardous waste to disposal or treatment facilities. | ARAR | Would apply to all off-site shipments of RCRA hazardous wastes. |
| | Recordkeeping | 40 CFR 262.40 | Generators must retain copies of all hazardous waste manifests used for off-site disposal. | ARAR | Generator must retain copies of waste manifests for a minimum period of three years after shipment date. |
| | Labeling and Marking | 40 CFR 262, Subpart C | Specifies EPA marking, labeling and container requirements for off-site disposal of hazardous waste. | ARAR | Pre-transportation requirements for off-site shipments of hazardous wastes. |
| | Accumulation Limitations | 40 CFR Part 262.34 | Allows generators of hazardous waste to store and treat hazardous waste at the generation site for up to 90 days in tanks, containers, and containment buildings without having to obtain a RCRA hazardous waste permit. | ARAR | Hazardous wastes may be stored for up to 90 days on-site without the need to meet storage permit substantive requirements. |

TABLE 8.3

ACTION-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| | RCRA - Treatment, Storage and Disposal of Hazardous Waste | 40 CFR 264/265 | Specifies requirements for the operation of hazardous waste treatment, storage and disposal facilities. | ARAR | Applicable for on-site hazardous waste treatment and storage and disposal activities. |
| Transportation of Hazardous Waste | RCRA - Transportation of Hazardous Waste | 40 CFR 263 | Specifies requirements for transporters of hazardous waste to obtain an EPA identification number, and comply with manifest and spill response procedures. | ARAR | Applicable for the use of transporters for off-site disposal of hazardous waste. |
| | USDOT Hazardous Materials Transportation Requirements | 40 CFR 171-180 | Establishes classification, packaging and labeling requirements for shipments of hazardous materials. | ARAR | Applicable for the preparation of hazardous materials generated on-site for off-site shipment. |
| Land Disposal of Hazardous Waste | RCRA Subtitle C | 40 CFR Section 6901 et seq. | Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes Universal Treatment Standards (UTSs) to which hazardous wastes must be treated to prior to land disposal. Phase IV rule revision establishes Alternate Treatment Standards for soils containing hazardous wastes. | ARAR | Wastes exhibiting a hazardous characteristic would need to be treated to meet UTS for all hazardous constituents present in the residuals prior to any upland or off-site disposal. Characteristically hazardous soils can be treated to meet the UTS standards or to meet the alternative treatment standards of RCRA hazardous soils. |
| | Land Disposal Restrictions (LDRs) | 40 CFR Part 268 | | | |
| Discharges to Surface Water | Clean Water Act Effluent Guidelines and Standards | 40 CFR 40 | Provides requirements for point source discharges of pollutants. | ARAR | Applicable for discharges of wastewaters to surface water bodies. |
| | Clean Water Act Stormwater Program | 40 CFR 122 | Regulates the discharge of stormwater from industrial activities. | ARAR | Applicable for point source discharges of stormwater to surface waters. |
| Analysis of Soil Waste | EPA Test Methods for Evaluation of Solid Waste | SW-846 | Establishes analytical requirements for testing and evaluating solid/hazardous wastes. | TBC | Consider when testing waste samples. |

TABLE 8.3

ACTION-SPECIFIC ARARS AND TBCS
RTI SUPERFUND SITE
ROCKAWAY TOWNSHIP, NEW JERSEY

| | *Requirements* | *Citation* | *Description* | *ARAR or TBC* | *Comment* |
|---|---|---|---|---|---|
| **State** | | | | | |
| Generation, Management, and Treatment of Hazardous Waste | Hazardous Waste Management Regulations | NJAC 7:26G | Provides requirements for the generation, accumulation, on-site management, and transportation of hazardous waste. | ARAR | Applicable for on-site management and disposal of hazardous waste. |
| | Soil Erosion and Sediment Control | NJAC 4:24 | Requires the implementation of soil erosion and sediment control measures for activities disturbing over 5,000 square feet of land surface area. | ARAR | Applicable for site activities involving excavation, grading or other soil disturbance activities exceeding 5,000 square feet. |
| | Hazardous Waste Management Regulations | NJAC 7:26G | Provides requirements for the generation, accumulation, on-site management, and transportation of hazardous waste. | ARAR | Applicable for site activities involving excavation, grading or other soil disturbance activities exceeding 5,000 square feet. |
| Analysis of Soil Waste | Technical Requirements for Site Remediation | NJAC 7:26E | Specifies standards for delineation sampling and analysis at remediation sites. | ARAR | Relevant and appropriate for sampling and analysis of site contaminants. |
| Contaminated Soil Excavation | None | | NJDEP Technical Guidance Document: Guidance Document for the Remediation of Contaminated Soils - January 1998. | TBC | Provides guidance for the excavation, management, characterization, testing, and disposal of contaminated soils. |
| | None | | NJDEP Technical Guidance Document: Field Sampling Procedures Manual August 2005 | TBC | Provides guidance for the sampling and testing of soils in area delineation, confirmatory sampling, and waste characterization sampling.. |

# APPENDIX III

## Responsiveness Summary

# RESPONSIVENESS SUMMARY
# RADIATION TECHNOLOGY INCORPORORATED SUPERFUND SITE
# ROCKAWAY TOWNSHIP, MORRIS COUNTY, NEW JERSEY

This Responsiveness Summary summarizes the public's comments and concerns regarding the Proposed Plan and preferred cleanup alternative to address contamination at the Radiation Technology Inc. Superfund Site (the Site). This summary also presents the U.S. Environmental Protection Agency's (EPA's) responses to the public's comments and concerns. At the time of the public comment period, April 13, 2011 to May 13, 2011, EPA proposed a preferred alternative for remediating soil at the Site. Subsequently, EPA has considered all comments received and summarized them in this document. Based on the consideration of all comments, EPA has developed a final decision for the selection of a remedial alternative for the Site.

This Responsiveness Summary is divided into the following sections:

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS: This section provides the history of the community involvement and interests regarding the Site.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS, AND RESPONSES: This section contains summaries of oral comments received by EPA at the public meeting. EPA also received one written comment on the Proposed Plan during the public comment period.

III. ATTACHMENTS: The last section of this Responsiveness Summary provides attachments that document public participation in the remedy-selection process for this Site including:

Attachment A: the Proposed Plan that was distributed to the public for review and comment;

Attachment B: the public notice that appeared in the *The Daily Record;*

Attachment C: the EPA Press Release announcing EPA plans to Remove Contaminated Drums from the Radiation Technology Inc. Site; and

Attachment D: the meeting agenda and transcript of the public meeting.

## I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

- On April 21, 2011, EPA held a public meeting to present the preferred remedial alternative for a waste/drum storage area, designated Operable Unit 2 (OU2), at the Rockaway Township Municipal Building, Rockaway, New Jersey. The meeting was attended by two residents and one representative from Picatinny

Arsenal. Previously, EPA has held numerous meetings with local officials to update them on the status of the Site. In addition, EPA meets annually at the Site with Congressman Rodney Frelinghuysen and local and state officials to discuss the Site. Although interest in the Site by local residents has been generally low, EPA has provided the community with fact sheets and has scheduled public information sessions near the Site. Additionally, EPA has had public outreach during residential well sampling events.

## II. SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

During the April 21, 2011 public meeting, comments from the public touched upon a number of topics of concern to stakeholders including: issues relating to the remedy for the waste/drum storage area, source area investigation and schedule, remediation activities, and other site-related issues. A summary of the comments received during the April 21, 2011 public meeting and EPA's responses follows.

**Issues relating to remedy for the waste/drum storage area**

1. Comment: A stakeholder asked why it took five years from Remedial Investigation (RI) to the conclusion of the Focused Feasibility Study.

   EPA Response: Since the Site is very large, it was necessary to take many samples. Approximately 130 locations were sampled. Most of the locations could have had operations that could have contributed to contaminating the groundwater.

2. Comment: Was the RI intended to only identify sources that contributed to the groundwater contamination?

   EPA Response: Primarily. The RI was performed to identify sources that contributed to the groundwater contamination.

3. Comment: Are the drums in the ground still causing contamination of the Site?

   EPA Response: The drums and surrounding soils were sampled to see if the contents of the drums were the same as the contamination in the groundwater. The sampling showed that the waste/drum area contained heavy metals. EPA has not seen heavy metals in the groundwater. However, the levels of heavy metals found in the waste/drum disposal area are above the state direct contact standards, and the drums and surrounding soils require excavation.

4. Comment: Did you sample the drums themselves?

   EPA Response: The drums are extremely corroded, so along with the drums, the material outside of the drums or on top of the drums were sampled. We tried to target the areas where we saw remnants of drums.

5. Comment: When the New Jersey Department of Environmental Protection put in wells, did any of these drums contain investigated-derived waste?

   EPA Response: No, those drums were stored in another area on-site and have since been disposed of off-site.

6. Comment: Are the drums from Thiokol operations?

   EPA Response: We cannot tell when or by whom the drums were placed as the drums are extremely corroded. Most of the drums were just empty or in pieces.

7. Comment: Were more drums present than what you could visibly see from the trail?

   EPA Response: There were not a lot of drums; just wood and construction debris.

8. Comment: If you cannot find the source, how can you remediate the groundwater?

   EPA Response: We installed many wells to investigate the groundwater, but that is a different phase of work, and is not part of this remedy.

9. Comment: Does the contaminated groundwater flow into Lake Denmark?

   EPA Response: All the information that we have gathered shows that the natural flow of the groundwater is toward Lake Denmark. However, EPA has not sampled the lake for site-related contamination.

10. Comment: Is the contaminated water eventually travelling into the Rockaway River?

    EPA Response: The water flows from Lake Denmark, into Lake Picatinny, to Green Pond Brook and finally into the Rockaway River. Picatinny Arsenal samples Green Pond Brook before it leaves Lake Picatinny and has not found any volatile organic compound (VOC) contamination.

11. Comment: According to the risk assessment, residential use is the only risk. Don't you consider the state regulation that you shall not have soil contamination above industrial levels?

    EPA Response: The risk assessment deemed that the Site is acceptable for industrial use, but not for residential use. The reason for this remedy is that the metals exceeded the risk of direct contact standards for a future resident.

12. Comment: When did EPA take over the Site from the state and why were you willing to take on the Site cleanup?

    EPA Response: Following a request from NJDEP, EPA assumed the lead for the Site in 2001. EPA was willing to assume the lead because we believed we could reach an agreement with a PRP to perform the remedial work. Negotiations with ATK resulted in a consent decree in 2004 in which ATK agreed to conduct remedial activities at the Site.

**Residential Well Issues**

13. Comment: Is the manganese in my well a naturally occurring thing?

    EPA Response: Yes, we have found elevated levels of manganese throughout the Site.

14. Comment: Can our home wells be sampled to make sure they are safe?

    EPA Response: We will review the recent groundwater sampling data and discuss if we need to expand the residential well sampling effort.

**Remediation Activities**

15. Comment: You are only concentrating on the area behind the Sterigenics facility?

    EPA Response: This was the only area of contaminated soil found during the investigation but it does not appear to be a source of the groundwater contamination. However, the soil does exceed state direct contact standards and needs to be addressed.

16. Comment: Who is funding this soil remedy?

    EPA Response: Alliant Techsystems, Inc., as the potentially responsible party, will pay for the soil remedy. EPA will provide oversight of the implementation of the remedy.

17. Comment: The purpose of this remedy is to decide whether to do something or nothing with the waste/drum disposal area?

    EPA Response: EPA always has to compare a no action remedy against any other alternatives as a baseline.

18. Comment: Was consideration given to putting a fence around the area?

    EPA Response: EPA did not consider a fence because the soil will need to be remediated as the contaminant levels exceeds state direct contact standards.

19. Comment: When is the waste/drum disposal area cleanup expected to occur?

    EPA Response: Once the Record of Decision is signed, EPA will need to negotiate an agreement with Alliant Techsystems, Inc. to actually do the work. Excavation activities should occur in spring 2012.

**Other Site-Related Issues**

20. Comment: Is there a plan to sample the water in the Lake Denmark interface or below the sediment?

    EPA Response: That is something that EPA will certainly evaluate. Right now, we will evaluate the latest round of groundwater sampling, including some wells installed near Lake Denmark, and see if there is a need to expand the sampling any further.

21. Comment: Does the contaminated soil travel? Might it be travelling up towards our homes? Do we have to worry about growing vegetables or anything like that?

    EPA Response: From what we understand, the soil contamination at the Site stems from the operations that happened there previously. The soil contamination in this case is heavy metals which would either move down to the groundwater which it has not or stay in place, which it has.

**Written Comments**

22. Comment: Was sampling done for perchlorate?

    EPA Response: Yes.

23. Comment: What levels of perchlorate were detected in soils, groundwater and nearby wells and what action levels did EPA evaluate these results against?

EPA Response:

Soils in OU2: the highest detected was 38.9 micrograms per kilogram (ug/kg).
Sediments: the highest detected was 69.9 ug/kg.
**Soils/sediments screening value**: 5,500 ug/kg

Surface Water: highest detected was 6.25 micrograms per Liter (ug/L).
**Surface water screening value**: 26 ug/L

Groundwater: highest detected was 324 ug/L.
**Groundwater screening value**: At the time of the review, in 2009, a groundwater standard had not been established for perchlorate. NJDEP uses 5 ug/L, and EPA uses 15 ug/L until a promulgated standard can be determined.

24. Comment: Does EPA consider New Jersey's statutory individual lifetime cancer risk level of $1x\ 10^{-6}$ an ARAR?

EPA Response: No. ARARs are Applicable or Relevant and Appropriate Requirements, and CERCLA requires that remedial actions attain or waive Federal environmental ARARs or more stringent State environmental ARARs upon completion of a remedial action. ARARs are chemical-specific, action-specific and location-specific, so a single risk level cannot be the basis for all ARARs. The ARAR is usually based on the most sensitive health effect, which is not always the cancer risk. Consistent with the National Contingency Plan, if estimated risks are above EPA's actionable levels (noncancer hazard greater than 1 or an excess lifetime cancer risk above 1 x 10(-4)[or one in ten thousand]), then a response may be needed to mitigate those risks. If so, remediation goals are identified, using an excess lifetime cancer risk of 1x10(-6) [or one in one million] as the point of departure for cleanup.

ATTACHMENT A
PROPOSED PLAN

Superfund Program Proposed Plan

U.S. Environmental Protection Agency, Region II

# Radiation Technology, Inc. Superfund Site

2011

## EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the U.S. Environmental Protection Agency's (EPA's) preferred alternative to address a waste/drum disposal area at the Radiation Technology, Inc. (RTI) Superfund Site (Site), located in Morris County, New Jersey. EPA's preferred alternative is Alternative 2, excavation of drum material with off-Site disposal and/or treatment.

This Proposed Plan includes summaries of the cleanup alternatives evaluated for use at the Site. This document is issued by EPA, the lead agency for Site activities.

EPA is issuing this document as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and Section 300.435 (c)(2)(ii) of the National Contingency Plan (NCP). This document summarizes information that can be found in detail in the Administrative Record file for this Site. This Proposed Plan is being provided to inform the public of EPA's preferred remedy, and to solicit public comments pertaining to the preferred alternative. The remedy described in this Proposed Plan is the preferred alternative for the Site. Changes to the preferred alternative, or a change from the preferred alternative to another alternative, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedy will be made after EPA has taken all public comments into consideration. The State of New Jersey is currently evaluating EPA's Preferred Alternative in this Proposed Plan. The public is encouraged to review and comment on the preferred alternative considered by EPA in this Proposed Plan.

## COMMUNITY PARTICIPATION

EPA and the New Jersey Department of Environmental Protection (NJDEP) provide information regarding the remediation of the RTI Site to the public through public meetings and the Administrative Record file for the Site. EPA and the State of New Jersey rely on public input to ensure that the public will have a more comprehensive understanding of the Site and the Superfund activities that have been conducted.

The dates for the public comment period, the date, location and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this Proposed Plan. This Proposed Plan and the supporting documents are being made available to the public during the public comment period. Written comments on the Proposed Plan will be welcomed

## MARK YOUR CALENDAR

**PUBLIC COMMENT PERIOD:**

**April 13, 2011 – May 13, 2011**

U.S. EPA will accept written comments on the Proposed Plan during the public comment period.

**PUBLIC MEETING: April 21, 2011**

U.S. EPA will hold a public meeting to explain the preferred remedy in the Proposed Plan. Oral and written comments will also be accepted at the meeting. The meeting will be held at the Rockaway Township Municipal Building, located at 65 Mount Hope Road, Rockaway, New Jersey at 7:00pm

**For more information, see the Administrative Record at the following locations:**

U.S. EPA Records Center, Region II
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-3261
Hours: Monday - Friday 9:00 am to 5:00 pm

Rockaway Township Free Public Library
61 Mount Hope Road
Rockaway, New Jersey 08341
(973) 627-2344
Hours: Monday - Friday 9 am to 9 pm

through May 13, 2011 and, if received by that date, will be considered by EPA before it issues the Record of Decision (ROD), which will formally document the selected remedy. All written comments should be addressed to:

Mr. Brian Quinn
Remedial Project Manager
U.S. Environmental Protection Agency – Region 2
290 Broadway – 19th Floor
New York, N.Y. 10007-1866

The selected remedy will be documented in the ROD only after consideration of all comments received. A public meeting has been scheduled for April 21, 2011 at 7:00 pm at the Rockaway Township Municipal Building.

## SITE HISTORY

Background/Site Characteristics

The Site is located in a predominantly rural area in the western portion of Morris County, New Jersey, at 108 Lake Denmark Road in the Township of Rockaway. It is situated approximately five miles north of Exit 37 of Interstate 80.

The entire Site consists of approximately 263 acres of land which is comprised of three distinct areas: the active former RTI complex (15 acres) the former Rockaway Industrial Park (RIP) (65 acres), and undeveloped land (183 acres) adjacent to those areas. Past activities at the Site have included the testing and development of rocket motors and propellants. More recent operations included irradiating food, cosmetics, and medical devices to sterilize them. Buildings in the RIP area have been vacant since 2006 and are in various stages of disrepair and/or disintegration. Only one business, Sterigenics International, occupies buildings on the former RTI portion of the Site.

Beginning in 1980, NJDEP and the Rockaway Township Health Department conducted numerous inspections of the Site. These inspections revealed that drums containing solvents and other organic chemicals were being improperly stored and disposed of by the owner and operator of Site, Radiation Technology, Inc.

In 1981, the Rockaway Township Health Department sampled two on-Site water supply wells. Results indicated that volatile organic compounds (VOCs) had contaminated the groundwater supplying these wells. They subsequently were condemned by the New Jersey Department of Health and the NJDEP, and were closed.

On July 6, 1983, NJDEP and RTI signed a judicial Consent Order, which required RTI to install ground water monitoring wells and collect samples for VOC analyses to determine the source of the contamination.

In August 1984, NJDEP issued a Site Evaluation Report with the objective of identifying sources of groundwater contamination at and around the RTI property. The results of the well sampling and analysis indicated that elevated levels of VOCs were present in the samples analyzed. Subsequently, the Site was placed on the National Priorities List (NPL) of Superfund sites in September 1984.

On March 12, 1987, RTI entered into an Administrative Order on Consent (AOC) with NJDEP and agreed to pay the cost of an investigation into the nature and extent of contamination at the Site. On December 12, 1992, RTI signed a second AOC with NJDEP, agreeing to perform some cleanup activities at the Site. In May 1993, under NJDEP supervision, RTI removed and disposed of abandoned tanks and drums off Site resulting from the above investigation. On May 9, 1994, NJDEP issued a ROD, selecting groundwater extraction and treatment as the remedy for the most-contaminated portion of the Site.

The following remedial action objectives (RAOs) were established for the groundwater at the Site:

- Prevent potential human exposure to contaminants in the deep aquifer groundwater which pose future carcinogenic risk to human health in excess of $10^{-6}$ and/or which have a hazard index greater than 1.

- Control the spread of groundwater contamination.

These RAOs would be achieved by the following remedial action components:

- Treatment of the groundwater via extraction of the more highly contaminated groundwater and natural attenuation of residual groundwater contamination;

- Reinjection of the treated groundwater; and

- Appropriate environmental monitoring to ensure the effectiveness of the remedy.

In addition, NJDEP and EPA acknowledged the need for subsequent investigations of potential sources of

groundwater contamination at the Site. This Proposed Plan focuses on those investigations.

**Remedial Investigation**

In January 2001, EPA assumed the lead for the Site at NJDEP's request. In May 2004, EPA negotiated a Consent Decree with Alliant Techsystems, Inc. (ATK) (a successor to Thiokol, a former owner and operator of the Site), to undertake the groundwater cleanup. In September 2004 and April 2005, ATK conducted groundwater sampling as part of a preliminary design investigation to obtain a better understanding of the groundwater contamination conditions and to confirm the viability of the groundwater remedy selected in the 1994 ROD. The results indicated that further sampling would be necessary and ATK recommended that additional monitoring wells be installed.

In October 2004, ATK and EPA entered into an AOC to investigate potential sources of groundwater contamination at the Site. ATK conducted a preliminary assessment of a waste/drum disposal area located within the active former RTI complex. Samples were taken from deteriorated drums and adjacent soils. The results of the sampling indicated that elevated concentrations of metals (aluminum (495,000 milligrams per kilogram (mg/kg)), arsenic (72 mg/kg), cobalt (65 mg/kg), copper (18,500 mg/kg), iron (689,000 mg/kg), manganese (3,400 mg/kg), and thallium (53 mg/kg)) were found in deteriorated drum material.

Additionally, EPA identified asbestos-containing material covering piping along a fence in a portion of the Site. EPA removed the material in November 2006.

In early 2007, EPA was notified by the U.S. Army Military Munitions Response Program that a portion of the Site is within the boundaries of earlier projectile practice firing over Lake Denmark from the Picatinny Arsenal. As a result, the potential exists for the presence of unexploded ordnance. An initial inspection conducted in the summer of 2007 by the U.S. Army concluded that no immediate actions were necessary. However, ordnance-avoidance procedures were recommended for certain field activities at the Site. In May 2008, EPA and ATK received information from the U.S. Army on the types of materials that should be avoided.

In July 2008, EPA approved ATK's proposal to investigate potentially contaminated source areas on the Site. In September and November 2008, ATK collected 130 soil, surface water, sediment, waste pit, and tank samples to investigate potential source(s) of contamination to the groundwater. The results of the field activities indicate that the deteriorated drum material in a portion of the Site referred to as the waste/drum disposal area would need to be addressed.

**WHAT IS A "PRINCIPAL THREAT"?**

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

## SCOPE AND ROLE OF THIS ACTION

In order to better manage Superfund sites, work is often divided into phases, or operable units (OUs). OU1 addresses groundwater at the Site. This action, referred to as OU2 which involves, excavation of drum material with off-Site disposal and/or treatment, is not intended to be the final action for this Site. EPA is currently conducting other activities, such as building investigations, which will be the focus of a third OU.

This Proposed Plan summarizes the remedial alternative analyzed in the Focused Feasibility Study (FFS), and discusses the preferred alternative for addressing the on-Site waste/drum disposal area which could pose a threat to human health and the environment.

## SUMMARY OF SITE RISKS

As part of the RI/FS, a baseline risk assessment was conducted to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes a human health risk assessment and an ecological risk assessment. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the

remedial action. The present land use within the Site is generally considered light industrial and commercial, although there are also significant portions of the Site that are undeveloped. It is anticipated that the future land use for this area will remain consistent with its current use.

A four-step human health risk assessment process was used for assessing site-related cancer risks and noncancer health hazards. The four-step process is comprised of: Hazard Identification of Chemicals of Potential Concern (COPCs), Exposure Assessment, Toxicity Assessment, and Risk Characterization (see adjoining box "What is Risk and How is it Calculated").

A baseline risk assessment is an analysis of the potential adverse human health and ecological effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate the releases under current and future land uses. The following areas: South Stand, P-2, RTI, East Stand, and Drum Disposal were evaluated in the baseline risk assessment. While contaminants were found in the various areas, with the exception of the Drum Disposal Area, all of the areas investigated fell within EPA's acceptable risk range.

Human Health Risk Assessment

Risks and hazards were evaluated for current and future exposure to drum materials and soil from around the drum material. The potential populations evaluated for exposure included adult commercial workers and future residents. The hazard indices for the commercial worker scenario (3.1) and future resident scenario (42) from exposure to drum materials were above the acceptable value of 1.0. Additionally, the cancer risk for potential future residents was above the EPA acceptable risk range of $10^{-6}$ to $10^{-4}$. The hazard index for exposure to surface soil for future potential residents was also above the acceptable value of 1.

**What is Risk and How is it Calculated?**

A Superfund human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substances released from a site in the absence of any actions to control or mitigate these releases; it estimates the "baseline risk" in the absence of any remedial actions at the site under current and future land uses. To estimate this baseline risk at a Superfund site, a four-step process utilized for assessing site-related human health risk for reasonable maximum exposure (RME) scenarios.

*Hazard Identification*: The hazard identification step identifies the contaminants of potential concern (COPC) in groundwater for this specific Site. Factors considered include: toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

*Exposure Assessment*: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways for a groundwater site include ingestion of groundwater and inhalation of volatiles while showering. Factors relating to the exposure assessment include but are not limited to the concentrations that people might be exposed to and the potential frequency and duration of exposure. Using these factors, a RME scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

*Toxicity Assessment*: The toxicity step determines the types of adverse health effects associated with exposures to chemicals or radionuclides, and the relationship between the magnitude of exposure (dose) and severity of adverse effects (response). Potential health effects are chemical or radionuclide-specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health effects.

*Risk Characterization*: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk for developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a $10^{-4}$ cancer risk means a "one in ten thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the exposure assessment. Current federal Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of $10^{-4}$ to $10^{-6}$ (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk). For non-cancer health effects, a "Hazard Index" (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding Reference Doses (RfDs). The key concept for a non-cancer Hazard Index is that a "threshold level" (measured as an HI of 1) exists below which non-cancer health effects are not expected to occur.

The following exposure pathway is considered to be of potential significance in the baseline risk assessment:

- Exposure to the drum material.

Summary of Hazards and Risks Associated with the Drum Disposal Area.

| Receptor | Hazard Index | Cancer Risk |
|---|---|---|
| *Drum Material* | | |
| Commercial Worker - Adult | **3.1** | 5.0E-05 |
| Resident – Adult/Child | **42** | **2.1E-04** |
| *Soil* | | |
| Commercial Worker - Adult | <1 | <1.0E-06 |
| Resident – Adult/Child | **1.3** | 6.0E-06 |
| The COCs identified for the Drum Disposal Area include: aluminum, arsenic, cobalt, copper, iron, manganese, and thallium. | | |

Ecological Risk Assessment

A screening-level ecological risk assessment was conducted to evaluate the potential for ecological effects from exposure to surface soil, surface water and sediment. Surface soil, surface water, and sediment concentrations were compared to ecological screening values as an indicator of the potential for adverse effects to ecological receptors. Exposure was also evaluated for terrestrial and aquatic wildlife species through the ingestion of prey and direct soil ingestion.

A complete summary of all exposure scenarios can be found in the screening level ecological risk assessment (SLERA). In summary, the results of the SLERA indicate that concentrations of contaminants detected in surface soil, surface water, and sediment at the Site are unlikely to pose any unacceptable risks to terrestrial or aquatic ecological receptors at the Site.

## REMEDIAL ACTION OBJECTIVES

The following remedial action objective (RAO) has been established for the waste/drum disposal area of the Site:

- Reduce or eliminate direct contact risks associated with contaminated drum material and associated contaminated soil to levels protective for residential use:

To achieve this RAO, preliminary remediation goals (PRGs) were developed for the Site based on state promulgated applicable or relevant and appropriate requirements (ARARs).

The following clean-up goals are based on NJDEP's residential soil remediation standards.

| **Contaminant** | **PRGs (mg/kg)** |
|---|---|
| Aluminum | 77,344 |
| Cobalt | 25 |
| Copper | 3,083 |
| Iron | 82,600 |
| Manganese | 3,640 |
| Thallium | 5 |
| Arsenic | 19 |

## DESCRIPTION OF ALTERNATIVES

Do to the limited extent of the contaminated area, EPA considered a containment remedy during the FFS planning phase, but determined it was not appropriate under the circumstances and eliminated it from further consideration.

**Alternative 1: No action**

Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction Time frame: None

Regulations governing the Superfund program require that a "no action" alternative be evaluated to establish a baseline for comparison to other alternatives. Under this alternative, EPA would take no action at the Site to prevent exposure to contaminated drum material. Since this alternative would result in contaminants remaining on the Site above levels that would not allow for unlimited use, a review of the Site at least every five years would be required.

**Alternative 2: Excavation of Drum Material, with Off-Site Disposal and/or Treatment**

Estimated Capital Cost: $196,000
Estimated Annual O & M Cost: $4,000
Estimated Present Worth Cost: $200,000
Estimated Construction Time frame: 1 month
Estimated Time to Achieve RAOs: 1 month

Under this alternative, approximately 100 cubic yards of contaminated drum material in the waste/drum disposal area would be excavated and transported off-Site for treatment and/or disposal. Following excavation of the

drum material, soils adjacent to the excavated drum material will be sampled to determine if they are above the PRGs. If the sampling results indicate that the soils are the above PRGs, they will be excavated and treated and/or disposed of off Site. In addition, any debris that is comingled with the contaminated drum material will be removed, treated and/or disposed of off Site. Following source remediation, areas disturbed by excavation activities will be re-vegetated and restored to pre-excavation conditions.

## EVALUATING REMEDIAL ALTERNATIVES

Nine criteria are used to evaluate remediation alternatives individually and against each other in order to select the best alternative. This section of the Proposed Plan profiles the relative performance of the alternatives against the nine criteria. The nine evaluation criteria are discussed below.

## COMPARATIVE ANALYSIS

### 1. Overall Protectiveness of Human Health and the Environment

Alternative 1, "no action," will not provide adequate protection of human health and the environment. Alternative 2 (excavation of drum material with off-Site disposal and/or treatment) will remove the contaminated material in the drum disposal area. Therefore, Alternative 2 is considered to be protective of human health and the environment.

Because the "no action" alternative is not protective of human health and the environment, it was eliminated from consideration under the remaining eight criteria.

### 2. Compliance with the ARARs

Actions taken at any Superfund site must meet all ARARs for federal and state law or provide grounds for invoking a waiver of these requirements. These include chemical-specific, location-specific, and action-specific ARARs. Alternative 2 would attain site-specific, risk-based soil PRGs and would meet all chemical,-location- and action-specific ARARs.

### 3. Long-term Effectiveness and Permanence

Alternative 2 would be permanent and effective since it removes the contaminated drum material from the Site.

**EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES**

***Overall Protectiveness of Human Health and the Environment*** determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

***Compliance with ARARs*** evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

***Long-term Effectiveness and Permanence*** considers the ability of an alternative to maintain protection of human health and the environment over time.

***Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment*** evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

***Short-term Effectiveness*** considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

***Implementability*** considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

***Cost*** includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

***State/Support Agency Acceptance*** considers whether the State agrees with the EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

***Community Acceptance*** considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

### 4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

Alternative 2 would reduce mobility of the contaminants in the drum material through excavation of contaminated drum material and disposal at an off-Site facility, and would reduce toxicity if treated off Site.

### 5. Short-Term Effectiveness

Alternative 2 would present short-term risk because of the potential for exposure to contaminated drum material during excavation and off-Site transportation. Air monitoring, engineering controls and the appropriate use of personal protective equipment for workers would be effective means to protect the community and workers.

### 6. Implementability

Alternative 2 may require excavation support and dewatering systems during the contaminated drum

material excavation activities. Equipment and vendors for implementation of Alternative 2 are readily available and are, therefore, not expected to present a challenge to remedy implementation.

### 7. Cost

The estimated present worth cost of Alternatives 2 is $200,000.

### 8. State/Support Agency Acceptance

The State of New Jersey is currently evaluating EPA's Preferred Alternative in this Proposed Plan.

### 9. Community Acceptance

EPA will evaluate community acceptance of the Preferred Alternative after the public comment period ends. EPA will discuss community acceptance in the ROD, the document that formalizes the selection of the remedy for the Site.

## SUMMARY OF THE PREFERRED ALTERNATIVE

The proposed remedy for the cleanup of contaminated drum material at the Site is Alternative 2, (excavation of contaminated drum material with off-Site disposal and/or treatment).

EPA anticipates that all of the contaminated drum material exceeding PRGs will be removed from the drum disposal area. Following excavation of the drum material, soils adjacent to the excavated drum material will be sampled to determine if they are above the PRGs. If the sampling results indicated that the soils are the above PRGs, they will be excavated and disposed and/or treated of off-Site. In addition, any debris that is comingled with contaminated drum material will be removed, disposed and/or treated off-Site.

EPA believes the Preferred Alternative will be protective of human health and the environment, will comply with ARARs, will be cost effective, and will utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.
The Preferred Alternative meets the statutory preference for the use of remedies that employ treatment that reduces toxicity, mobility or volume as a principal element to address the principal threats at the Site. The Preferred Alternative can change in response to public comment or new information.

Consistent with EPA Region 2's *Clean and Green* policy, EPA will evaluate the use of sustainable technologies and practices with respect to any remedial alternative selected and implemented for the Site.

## COMMUNITY PARTICIPATION

EPA provides information regarding the cleanup of the RTI Site to the public through public meetings, the Administrative Record file for the site, and announcements published in the Daily Record. EPA and the State encourage the public to gain a more comprehensive understanding of the site and the Superfund activities that have been conducted there. The dates for the public comment period, the date, location and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this Proposed Plan.

EPA Region 2 has designated a Regional Public Liaison Manager as a point-of-contact for community concerns and questions about the federal Superfund program in New York, New Jersey, Puerto Rico and the U.S. Virgin Islands. To support this effort, the Agency has established a 24-hour, toll-free number that the public can call to request information, express their concerns or register complaints about Superfund.

<table>
<tr><th colspan="2">For Further Information on the RTI Site, please contact:</th></tr>
<tr><td>Brian Quinn<br>Remedial Project Manager<br>212-637-4381<br>quinn.brian@epa.gov</td><td>Patricia Seppi<br>Community Involvement Coordinator<br>212-637-3679<br>seppi.patrica@epa.gov</td></tr>
<tr><td colspan="2">U.S. EPA<br>290 Broadway, 19th Floor.<br>New York, New York 10007-1866</td></tr>
<tr><td colspan="2">The Regional Public Liaison Manager for EPA's Region 2 office is:<br><br>George H. Zachos<br>Toll-free (888) 283-7626<br>(732) 321-6621</td></tr>
<tr><td colspan="2">U.S. EPA Region 2<br>2890 Woodbridge Avenue, MS-211<br>Edison, New Jersey 08837</td></tr>
</table>

ATTACHMENT B
PUBLIC NOTICE ANNOUNCING PROPOSED PLAN
AND COMMUNITY MEETING

**U. S. ENVIRONMENTAL PROTECTION AGENCY TO HOLD PUBLIC MEETING TO ANNOUNCE THE PROPOSED PLAN AND A PUBLIC COMMENT PERIOD FOR THE RADIATION TECHNOLOGY INC. SUPERFUND SITE IN ROCKAWAY TOWNSHIP**

The U.S. Environmental Protection Agency (EPA) will hold a Public Meeting on Thursday, April 21, 2011 at 7:00 p.m. at the Rockaway Township Municipal Building located at 65 Mount Hope Road.

The purpose of the meeting is to announce EPA's Proposed Plan explaining the preferred alternative to address a waste drum disposal area at the Radiation Technology Site (RTI) Superfund Site (site) which is located in Rockaway Township, Morris County, New Jersey and to accept any written or oral comments on the Proposed Plan.

A 30-day public comment period will begin on April 13, 2011 and extend until May 13, 2011. Written comments on the Proposed Plan will be accepted through May 13, 2011 and, if received by that date, will be considered by EPA before it issues the Record of Decision, which will formally document the selected remedy. All written comments should be addressed to:

Mr. Brian Quinn
Remedial Project Manager
US EPA – Region 2
290 Broadway – 19th Floor
New York, NY 10007

The entire Proposed Plan is available for review on the following EPA web site:
www.epa.gov/region2/superfund/npl/radiationtechnology

If you have any questions or concerns about site related issues, please do not hesitate to contact Pat Seppi, EPA Community Involvement, at 212.637.3679 or by email at seppi.pat@epa.gov

ATTACHMENT C
EPA PRESS RELEASE ANNOUNCING EPA TO REMOVE CONTAMINATED SOIL
FROM THE RADIATION TECHNOLOGY, INC. SUPERFUND SITE.

EPA Releases Plan for Next Phase of Cleanup at Radiation Technology Site in Rockaway, New Jersey

Release date: 04/13/2011

Contact Information: Elias Rodriguez, 212-637-3664, rodriguez.elias@epa.gov

(New York, N.Y.) The U.S. Environmental Protection Agency (EPA) has proposed a plan for the next phase of cleanup work at the Radiation Technology, Inc. Superfund site in Rockaway Township, New Jersey. The 263-acre site was used for testing and developing rocket motors and developing propellants. Ground water at the site is contaminated with volatile organic compounds, a group of chemicals that can have serious health effects. EPA is proposing to dig up and remove pieces of deteriorated drums that are buried in a waste disposal area at the site to prevent them from further contaminating the surrounding soil with heavy metals.

EPA is requesting public comments on the proposed plan and will hold a public meeting to explain the plan and receive comments on April 21, at 7:00 p.m. at the Rockaway Township Municipal Building at 65 Mount Hope Road, Rockaway, New Jersey. Comments will be accepted from April 13 to May 13.

"The improper storage and disposal of drums at this industrial facility has resulted in contamination that has damaged the environment and poses a potential threat to drinking water quality," said EPA Regional Administrator Judith A. Enck. "The cleanup plan proposed today advances EPA's work at the site and we welcome public input on the contamination problem in Rockaway."

EPA's cleanup of the Radiation Technology site is being conducted in phases to facilitate the long-term restoration of the area. The work is being done by the responsible party, Alliant Techsystems (the successor to Thiokol, the former owner and operator of the site), with EPA oversight. During the first phase of the cleanup, the company installed wells to measure and monitor ground water contamination. Nearby residential drinking water wells were also sampled to ensure that drinking water was not affected. To date, the sampling has shown that the drinking water is not contaminated and monitoring of the residential wells continues.

The second phase of the cleanup, announced today, recommends the removal of the deteriorated drum material, followed by off-site disposal or treatment. Alliant Techsystems investigated areas of the site that could be a source of the ground water contamination and found that the drum material in a portion of the site was contaminating the soil and the underlying ground water, and needed to be removed.

Once the deteriorated drums are removed, soil in the immediate area will be sampled to determine if the soil is contaminated and needs to be excavated and disposed of or treated off-site. In addition, any debris that is mixed in with the contaminated drum material will be removed, disposed of or treated off-site. Areas disturbed by excavation activities will be restored. This work will take about one month to complete.

The third and final phase of the cleanup will address buildings and other structures on the property. Initial investigation work to determine what cleanup work will be needed has begun.

EPA will address public comments on the second phase of the work and expects to select and finalize a cleanup plan this summer.

Written comments may be mailed to:

Mr. Brian Quinn
Remedial Project Manager
U.S. Environmental Protection Agency – Region 2
290 Broadway – 19th Floor
New York, N.Y. 10007-1866
212-637-4381
quinn.brian@epa.gov

The EPA has a web page on the Radiation Technology, Inc. Superfund at:
http://www.epa.gov/region2/superfund/npl/radiationtech/index.html

Follow EPA Region 2 on Twitter at http://twitter.com/eparegion2 and visit our Facebook page,
http://www.facebook.com/eparegion2

ATTACHMENT D
MEETING AGENDA AND TRANSCRIPT OF
21 APRIL 2011 PUBLIC MEETING

# Agenda

- Introduction ..... Pat Seppi, CIC
- Site History and Overview ..... Diego Garcia, RPM
- Site Investigations ..... Diego Garcia, RPM
- Proposed Alternatives ..... Brian Quinn, RPM
- Preferred Alternative ..... Brian Quinn, RPM
- Questions

**In The Matter Of:**

*RADIATION TECHNOLOGY*

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*Hearing*
*April 21, 2011*

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**Word Index included with this Min-U-Script®**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

RADIATION TECHNOLOGY, INC.
SUPERFUND SITE PUBLIC MEETING

Rockaway Township Municipal Building
65 Mount Hope Road
Rockaway, New Jersey

April 21, 2011
7:00 p.m.

APPEARANCES:
PATRICIA SEPPI,
Community Involvement Coordinator

BRIAN QUINN,
Remedial Project Manager
DIEGO GARCIA,
Remedial Project Manager

ALSO PRESENT:
CARRIE BLOMQUIST, Alliant Techsystems
BOB MARTIN, Conestoga-Rovers & Associates



**MS. SEPPI:** Thank you very much for coming out this evening. Not much of a crowd, so we appreciate the fact that you're here.

What I'd like to do first is have everybody that's with us introduce themselves and tell you how they're related to the site.

My name is Pat Seppi. I'm with EPA in Region II, and I'm the Community Involvement Coordinator for the site.

**MR. GARCIA:** My name is David Garcia, I'm the remedial project manager. I've had this site for many years, and I will be giving a historical perspective of the site and also be discussing other aspects of what's been going on in here for a long time.

**MS. SEPPI:** Brian?

**MR. QUINN:** Brian Quinn. I'm taking over the site from Diego. We work together, and I'll



be the point of contact from this point forward. And Diego will still be around, so I'll still be able to get the historical stuff from him.

From here forward, if you contact him, we'll get back to you.

**MS. SEPPI:** Thank you. Carrie?

**MS. BLOMQUIST:** I'm Carrie Blomquist. I'm a project manager with Alliant Techsystems, also known as ATK.

And we got involved in the project when we purchased Thiokol, a company who had historically operated out at the site.

**MS. SEPPI:** Thank you, Carrie.

Bob?

**MR. MARTIN:** I'm Bob Martin, I'm with Conestoga-Rovers & Associates, and we're the company that assisted ATK in investigation



at the project.

**MS. SEPPI:** This is Linda Marino. She's our stenographer this evening. This is a public meeting, so we'll have a transcript from it. Any comments that you make tonight regarding the site and the alternatives will be part of the record, and that will be addressed in our final document.

Since there's only three of you, if you don't mind, why don't you tell us who you are?

**MR. GRAZIOLI:** I'm Al Grazioli. I live on Lake Denmark Road.

**MR. GIARRATANO:** Frank Giarratano, Lake Denmark Road resident.

**MR. GABLE:** I'm Ted Gable. I work at Picatinny as project manager for the cleanup.

**MS. SEPPI:** One thing that gets a little bit different when

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we have a meeting that's being transcribed, at the end, if you have questions or during the presentation, if you —

I don't know if you need them to say their name again, Linda.

**COURT REPORTER:** If you just give me a minute, I'll note the names now, and they won't have to.

(Pause in proceedings)

**MS. SEPPI:** Actually, there's a couple reasons for this meeting tonight.

The first one is we want to explain to you about how we want to address a drug disposal area that we found at the Radiation Technology site.

And most important is we want to solicit your comments on our preferred remedy, EPA's remedy. And we're very interested in public input and what you think.

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And if you have any questions about it, again, as I said, your questions will become part of our final decision on this site.

The public comment period usually lasts about thirty days. It opened on April 13 and it closes on May 13. So, if after this meeting you have any additional comments, you're certainly welcome to send them to Brian until close of business on May 13. Sometimes when you go home, you think about other things.

Just a little bit — I don't want to bore you with the Superfund remedial process because we're a bureaucracy, and, believe me, there is a process involved in Superfund. But I just wanted you to know a couple of things.

EPA took over this site from the DEP, the Department of

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Environmental Protection, which is the State. They turned it over to the Federal EPA in about 2000.

And since then, a few years after that, we negotiated with ATK on what's called a Consent Decree. And they've gone ahead and done some sampling and investigations and gotten us to this point where we have a proposed plan to clean up this drug disposal area that we found.

We'll be taking public comments, and then after that we issue what's a legally-binding document that's called a Record of Decision. And that kind of lays out exactly our plan to clean up the site, and your comments will be an addendum to that document.

After that Record of Decision, which we hope to have this summer, we actually go out and design the cleanup and then we put it into action. And then

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after that, we have maintenance that goes on for years, O&M. In a nutshell, that's pretty much what we're doing.

So, the part we're here for tonight is the public part, where, again, we'll set out to you what it is we'd like to do and accept your comments.

Linda, I've asked her if she has any problems or doesn't understand something or wants you to speak a little slowly, she'll stop and ask you. So, that's a possibility. But I've worked with her many times, and she's very good.

**COURT REPORTER:** Thank you.

**MS. SEPPI:** Diego, do you want to talk a little about the site history?

**MR. GARCIA:** Sure, we can talk a little bit about the site history.

The site is located in the

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western portion of Morris County. It's 108 Lake Denmark Road in Rockaway Township. Apparently, some of you in the area know the location of this site.

It consists primarily of about 263 acres which is comprised of three distinct areas. And I will show you — I believe after this slide, there's another slide that shows you the site itself, and it breaks out the three different distinct areas.

But as you can see, there are three areas. There's the active RTI complex area, which is about fifteen acres. That is where there is a business called Sterigenics that operates out of there. You may have seen it, for those of you who know the area.

There's also the former Rockaway Industrial Park area. That's about 65 acres. That's the area surrounded by fence, and

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there are some signs outside that says "Do not enter." The reason for that is that area, there's a lot of old buildings and structures, and, certainly, we are very cautious and careful that people don't injure themselves on that property. We don't want them on there. So, that's why it's closed up. It is private property, and we don't want people there.

Then the remainder of the site, which is about 183 acres, and I believe the western — the northern portion of it is where it abuts the Picatinny Arsenal site.

Am I correct?

**MR. MARTIN:** More west.

**MR. GARCIA:** More west, I'm sorry.

And that abuts Picatinny property, so it's kind of hard to differentiate which is Picatinny and which is the RTI site, but

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there is a part of that property that bounds it. It also bounds Lake Denmark, which I know many of you know is a rather large lake in the area.

Past activities at the site include the testing and development of rocket motors and propellants, and I'll get into a little about what transpired over the years at that site.

And as I said, there's a company called Sterigenics that operates on a portion of the site, which is the active RTI complex portion. The remainder of the site has been vacant since 2006 with restricted access. Many of you know, you can't get on the property.

Brian, can I have the next slide, please?

Actually, we're going to skip this slide.

The site is located, as you

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can see — this is the Picatinny Arsenal property, this is Lake Denmark. The 65-acre parcel is here.

Actually, if we go to the next slide, it's probably better.

This is Lake Denmark. This is the 183 acres of undeveloped property, in this area.

This area right here, which is the active complex area, is where the Sterigenics facility is. And, also, behind there is where we're going to be discussing a bit about the drum disposal area.

Then that's the 63-acre parcel, which is the fenced-in area where a lot of the historical rocket motor testing was done.

Did we skip one, Brian? We're missing a slide, I believe. Something happened to one of the slides.

Okay. We're on here, 1981. I'm going to go back a little bit

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before the — what had transpired and got this site listed on the National Priorities List.

The site prior to 1941 was owned by a company called Singer Manufacturing. The site was not developed. It was not used for anything, I believe, at that point.

After the early 1940s, it was purchased by a company called Reaction Motors. And not until about the early fifties, I believe, it was purchased by — it was purchased by a company called Thiokol.

**MS. BLOMQUIST:** Reaction Motors still had it, they just started developing it in the fifties.

**MR. GARCIA:** They started developing the property in the early fifties with this company called Thiokol Corporation.

For about fifteen years or

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so, they operated on the property in — why am I getting a blank here — they did rocket motor testing and the development of rocket propellants and different aspects of that type of work.

A company named Reaction Motors, as many of you know — excuse me, Radiation Technologies. Now I'm getting it right.

Radiation Technologies purchased the property I believe in...

**MS. BLOMQUIST:** '72.

**MR. GARCIA:** '72. I always had a hard time with the old stuff.

In '72, they operated on this fifteen-acre parcel mostly but they did own the entire site. And they were doing different types of work there; radiating spices — not spices, medical devices, impregnating woods, trying to do all different types

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of work.

In 1981, there was — some of the employees in the facility noticed that the water had a bad odor and tasted strangely. So, the Rockaway Township Department of Health was called in, along with NJDEP, and they identified in two on-site drinking water wells volatile organic compounds.

Once that was determined, Rockaway Township asked Radiation Technologies to close those wells. They also — the Rockaway Township Health Department sampled the residential wells on the property — not on the property, the residential wells in the area, but they found none of the wells to be effected.

So, they began sampling the wells back in the early eighties, so it's been some time since they began sampling those wells.

In addition, NJDEP required

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Radiation Technologies to conduct an investigation of the groundwater there because they found it was contaminated with volatile organic compounds.

**MR. GIARRATANO:** What is that?

**MR. GARCIA:** Volatile organic compounds are typically degreasers or they're used in cleaning components. On this site, I believe that's what they used it mostly for.

So, in 1984, the site was listed on what we call the National Priorities List, the Superfund sites, because of elevated levels of organic compounds in the groundwater. And that's when DEP started to do a remedial investigation to try to identify what the sources of the groundwater contamination was and how to address the groundwater at the site.

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From '90 to '93, different measures were taken on the site that include removal of underground storage tanks, removal of some soils, debris, cleaning of sumps. There were all different things that they tried to address.

In 1994, EPA issues a Record of Decision for the groundwater based on the work DEP did. And what was chosen was a remedy to extract and treat the contaminated groundwater on a portion of the site, mostly.

Give me another slide, please.

Okay. DEP was working with the owner of the company called Radiation Technologies. And what happened in 1989, the company went bankrupt. So, at that point, DEP requested EPA's assistance working on the site and transferred that site over to EPA to become a federal lead site.

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Once EPA got the site, we began an investigation to identify a responsible party on the site. And, so, in 2004, we identified a company called Alliant Techsystems —

**MS. BLOMQUIST:** It was Thiokol first.

**MR. GARCIA:** It was first called Thiokol, and then ATK is successor to Thiokol.

And EPA and ATK negotiated an agreement to further investigate potential sources of groundwater. And that's what we call the Operative Unit 2 work.

From that time, from 2004 to 2009, Alliant Techsystems and EPA did an investigation on the site to try to identify sources of groundwater contamination.

In 2010 and 2011, EPA prepared what we call a focussed feasibility study, which is where we're at now.

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**MR. GIARRATANO:** I'm just wondering why the next to last step, why is that a five-year process?

**MR. GARCIA:** From '04 to '09?

**MR. GIARRATANO:** Yes.

**MR. GARCIA:** Well, one of the reasons, as you know, it's a very large site.

And you'll see in the subsequent slides that we looked at about — I believe we took about 130 locations or samples throughout the site. So, one of the things we did is we tried to focus on areas that historically may have had operations that could have contributed to contaminating the groundwater. And a lot of that information was very old information, so we had to go back in time and look at a lot of the old records and try to identify those areas. So, it took some

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time.

**MS. BLOMQUIST:** And there's a process.

**MR. GARCIA:** There's a review process.

**MS. BLOMQUIST:** We have to prepare a work plan, it needs to be approved by EPA, we incorporate comments, and it's just that — developing before you go out and do the investigation just takes some time.

**MR. GABLE:** Was that investigation only to find sources or was it to look for more groundwater?

**MR. GARCIA:** Yes, it's to identify sources that contributed to the contaminated groundwater.

Any other questions?

So, in 2004 — and I want to step back a bit because I believe it was about late 2003, early 2004, EPA and Alliant Techsystems did a reconnaissance of the site.

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We walked around the site, basically, and we identified some debris and some drums behind the storage facility, which is that fifteen-acre parcel.

In 2004, Alliant Techsystems did a preliminary assessment of that area with EPA oversight, and we chose twelve sampling locations to take samples. And we analyzed them for different compounds that we believed could be contributing to contaminated groundwater. There were volatile organic compounds.

We also chose something called perchlorate. It's typically used in rocket — you see a lot of rocket motor sites or other sites where they use propellants mostly.

**MS. BLOMQUIST:** Solid rocket fuels.

**MR. GARCIA:** Solid rocket fuels.

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And we also did a scan for radiological parameters because we weren't really sure what we may encounter and wanted to rule that out because there was — Radiation Technologies did irradiate foods — not foods, medical devices and some other things.

The results indicated only low levels of volatile organic compounds and elevated levels of metals. And we didn't find any radiological contamination either, so that was a good thing.

Just to give you a sense of what we looked at, Lake Denmark Road is right here. You can see it here. The Sterigenics facility is I believe around this area.

What we targeted was and what we saw was these different areas where we saw debris and drums and what we call refuge in these areas, and I believe there was another area here. So, we

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targeted those areas for sampling.

**MR. GIARRATANO:** Were the drums in the ground still polluting the site?

**MR. GARCIA:** Well, no, at that point right now, we just knew there were contaminated drums in the area and that's what we saw.

And we sampled those drums. We were curious to see what the contents of those drums were to see if they were the same contaminants that were in the groundwater.

Later on you'll see in the slides what we found is there are metals in the drums. And we have not seen what we call metals in the groundwater. So, as far as we see, they're not contributing to the contaminated groundwater. It's just material that is certainly above our cleanup numbers and has to be addressed, but it's not contributing to the

Page 24

groundwater. So, we will address those drums and get them out of there.

Next slide.

In 2008, after preparing work plans and going through the process of getting approvals on doing a remedial investigation, Alliant Techsystems went out and collected about 130 samples from the soil, the surface water, sediments, and waste material from those drums, certainly. Again, we analyzed for the same contaminants we just mentioned, which is the volatile organic compounds, metals, and perchlorate.

We also installed 32 test pits in the drum disposal area and took about 16 soil and waste samples from 11 of those test pits.

**MR. GABLE:** You sampled the drums themselves?

**MR. GARCIA:** The drums

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themselves, there really is no drum. A lot of the drums are in disrepair, so it's just material that's outside of the drums or on top of the drums or just empty. We tried to target the areas where we saw remnants of drums.

**MS. BLOMQUIST:** A lot is at the surface.

**MR. GABLE:** There were some drums there I noticed —

Do you mind if I ask a question?

**MR. GARCIA:** Not at all.

**MR. GABLE:** When the DEP put in wells, there were drums from their IDW, Identified Waste.

Are those any of the drums that you looked at?

**MR. GARCIA:** No.

**MS. BLOMQUIST:** No, they're not in that area. At least they're not there now.

**MR. GABLE:** Good.

**MR. GARCIA:** We believe

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these drums have been there for a long time.

**MS. BLOMQUIST:** These were all corroded.

**MR. GABLE:** Are these drums from the Thiokol operations?

**MS. BLOMQUIST:** We don't really know. They're just rusted —

**MR. GABLE:** Can't tell if they're from the sixties, seventies, eighties, nineties?

**MR. GARCIA:** At this point, no, we really couldn't.

A lot of it is mostly debris.

**MS. BLOMQUIST:** It's metal, rusted metal.

**MR. GARCIA:** A lot of rusted metal. If you see outside, you'll see some remnants of drums. I don't think we found any intact drums at all. Most of them were just empty or partly, you know, full or pieces of drums.

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**MS. BLOMQUIST:** And they're just rusted out.

**MR. MARTIN:** You can click ahead and show them.

**MS. BLOMQUIST:** There is a picture.

**MR. GARCIA:** Actually, Brian, why don't you go ahead and we'll come back and show you what it looks like.

This is what it looks like.

**MR. GABLE:** There's a well right near here.

**MR. GARCIA:** Yes, there's a well I believe right over here.

**MR. GABLE:** That was put in by the State.

**MR. GARCIA:** Yes. And that's one of the wells we use in sampling for our groundwater work.

The Sterigenics facility is up here. So, this — for those of you who know this area, there's a railroad spur that kind of goes

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along Lake Denmark. And, so, this is south of that railroad spur. And if you walk along it, you'll see it.

**MR. GRAZIOLI:** I know where it is.

**MR. GABLE:** The trenching occurred — you did some of the trenching right there?

**MR. GARCIA:** We did trenching in these areas, yes.

**MR. GABLE:** Okay.

**MR. GARCIA:** A series of trenches.

If you go back, Brian. These are the trenches. What you saw, I believe, is in this area.

**MR. GABLE:** Where's the lake?

**MR. GARCIA:** The lake is here.

**MS. BLOMQUIST:** There's the little trail.

**MR. GARCIA:** This is the old

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railroad spur here, this is the trail. The wells, I believe, are about here, in this area.
**MR. GRAZIOLI:** Are the power lines over there?
**MR. GARCIA:** The power lines are here.
And then what we did is we put it — like you see, a series of test pits in the area to try to identify the area where we found the drum material.
And these color-coded yellow areas are where we found mostly debris, I believe. And then the blue-shaded areas are where we found surface debris also.
So, it mostly centers where that picture we showed you is, where we found most of the material, I believe.
And this is the area that we'd like to address.
**MR. GABLE:** There was no liquid in any of these drums that

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you uncovered?
**MR. GARCIA:** We did not see any liquid.
**MR. GABLE:** Wow.
**MR. GARCIA:** They may have been liquid at one point.
**MR. GABLE:** Were there more than what you could visibly see from the trail, more in there underneath?
As you dug your trench, you found more of them?
**MS. BLOMQUIST:** There wasn't a lot of drums. There was wood, there was construction debris from when they historically — I think when they built the working facility, they would dump construction debris and stuff in there.
**MR. MARTIN:** Essentially, what it is is a small dump.
They excavated out the soil material. And whatever debris and drums — most of them were

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empty — they just tossed in there.
**MS. BLOMQUIST:** Yes.
And I think it was used by everybody who had owned the property.
**MR. GABLE:** Or didn't.
**MS. BLOMQUIST:** Exactly.
There's plenty of couches and other things back there too.
**MR. MARTIN:** RTI was a big user of drums in their operation.
**MS. BLOMQUIST:** And they disposed of a lot of drums there.
**MR. GARCIA:** Want to go back two slides?
Just to give you a perspective of where we targeted, the hashed areas or areas that we targeted for investigations, this right here is Lake Denmark Road. The residential homes, I believe, are up here in this area.
The hashed areas are all areas where there historically has

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been some sort of operations at.
And then I believe this is the drum dump. Yes, that's the drum dump area we've identified.
Also, this is the 65-acre parcel here, this is the 15-acre parcel here, and surrounding the property is the undeveloped area, which we've done a preliminary assessment and found that historically there was never any development in that area and don't believe there was any work that was done there.
Let's go forward. We just saw that slide.
So, the current site investigations. What we call a focussed feasibility was done, and it was prepared and evaluated, selected remedial alternatives to address the drum contents.
We identified seven metals in that drum material. They are listed on the slide: Aluminum,

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arsenic, cobalt, copper, iron, manganese, and thallium.
And let's go to the next slide.
**MR. GIARRATANO:** I've been told I have manganese in my water by my well guy and also when it's been tested.
Is that a naturally occurring thing?
**MR. GARCIA:** I believe in the area it is.
**MS. BLOMQUIST:** Yes.
**MR. GARCIA:** I think we've seen it in elevated levels of groundwater in general throughout the site.
Haven't we?
**MR. MARTIN:** Iron and manganese.
**MR. GARCIA:** So, current site investigation. The results found low concentrations of VOCs and semi-volatiles at various locations throughout the site but

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no sources of groundwater contamination were identified. So, there were no sources that we could find that are contaminating the groundwater.
The only area that we found was the drum disposal area that had elevated metal concentrations that are not affecting the groundwater but we know needs to be addressed because they do pose a potential risk.
**MR. GIARRATANO:** If you can't find a source, how can you remediate it?
**MS. BLOMQUIST:** We put in a lot of groundwater monitoring wells.
**MR. GARCIA:** That's the other phase of the work we're doing, which is for the groundwater. And as we discussed earlier — and if you'd like, after this presentation we can certainly talk about that further.

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That's another part of the work that we're dealing with right now, that we've installed additional monitoring wells, we've been sampling and expanding our investigation of where the contamination is, and sampling the residential wells.
It's a very large site. We believe we did a pretty good job trying to identify the sources, where the potential sources were. But historically, these operations happened a long time ago, so the sources may have already migrated down to the groundwater, so we may not find those sources, it would just be in the groundwater and now are embedded in the rock and...
**MR. GIARRATANO:** Which means you really can't do anything about it.
**MR. GARCIA:** Well, we can treat the water. That may be one of the options that we decide

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we'll do on the site. Certainly, if nobody is using the water, that's something — the EPA has to make a decision what we would do with the groundwater.
As I said to you earlier in sidebar, our goal certainly is to protect the public. So, we will continue to monitor the residential homes to make sure that none of that contaminated groundwater is entering the residential wells. But at this point right now, we are still evaluating what to do about the groundwater.
**MR. GIARRATANO:** Does it all flow into Lake Denmark?
**MR. GARCIA:** As far as we see, all the information that we've gathered shows that the natural gradient of the water is going towards Lake Denmark.
**MR. GIARRATANO:** Where does that go?

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MR. GARCIA: Into Lake Denmark and gets —
MR. GABLE: It goes from Lake Denmark, goes through Picatinny into Lake Picatinny, and then Green Pond Brook into Rockaway.
MR. GIARRATANO: So, eventually that contaminated water is traveling into Rockaway River?
MR. GABLE: Yes, but Picatinny does sample Green Pond Brook before it leaves Picatinny.
Are we discussing the groundwater now?
Because I'd like to know if you've sampled Lake Picatinny — Lake Denmark to see if there's any influence of what we see into that lake.
MR. GARCIA: What we have done — and I'd like to just finish this presentation, and, certainly, we can talk about this when we're done.

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We have put additional — I can tell you we have put additional wells in recently along Lake Denmark and we have been sampling those wells, and we can discuss that later on in our presentation.
MR. MARTIN: You said there were really no sources identified, but there was inter-remedial measures done or they did some cleanup or tank removal.
MR. GARCIA: Right, I mentioned that earlier.
MR. MARTIN: I think that might have been what he was asking about.
Even RTI operations with some of their test pits and the drums there, just by stopping their operations there actually removed a source.
MR. GARCIA: It could have, absolutely. And when those inter-remedial measures were done, they

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removed potential sources of contamination when they did that work. You know, they may have been leaking tanks, which they pulled out; there was contaminated soil underneath the leaking tanks; some of the sumps that they found with contamination in them, they pumped out.
So, there was work that they did to, hopefully, not exacerbate the problem. It's been done back in the early nineties. So, I think a combination between that and what we've done now gives us a good overview of trying to identify sources of contamination.
Let's go to the next slide, Brian.
I was going to let Brian do this. Certainly, he's more than welcome to.
MR. QUINN: What the heck?
MR. GARCIA: He'll talk about what the alternatives are

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that we're considering.
MR. QUINN: Basically, when we do the focussed feasibility study, we take the RI, Remedial Investigation, data and further look at it and look at alternatives to get rid of what's there and come up with ideas, evaluate the cost, and a few other parameters.
For this, there was only two chosen because no action is always chosen because we need that as a baseline to say if we don't do anything at the site compared to other costs and the risks of other ones.
So, this one was no action. You're saying obviously it doesn't cost anything to do nothing and that there's no construction. And then we really won't achieve RAOs, which is the Remedial Action Objectives, which is usually whatever the mediated source: If

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it's soil, it's the DEP cleanup numbers; if it's the water, it's the DEP cleanup groundwater numbers. So, obviously we won't achieve any of those because it's still sitting there.

The second one, as we've been discussing, is the excavation of the treatment and taking it off site for disposal and, if necessary, a treatment option on this.

The cost of that is roughly $200,000, will take about a month, and the same time frame to achieve the remedial objectives because it's just going to dig up the area, sample, and keep digging until we've got everything out, and then backfill it and grade it back to where it was, previous conditions.

**MR. GRAZIOLI:** Now, this is the site where the drums were found, the dumping area.

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**MR. QUINN:** Correct, behind Sterigenics.

**MR. GRAZIOLI:** And you're concentrating and focusing just on that area?

**MR. QUINN:** Right. If we found other source areas, they would be included. But since this is the only thing that was found — not quite a source area, but still needed to be addressed.

Go to the next one. So, this is kind of a little more than I just said, but alternative one, we take no action. Since it stays on site, we would be required to do a five-year review because they want us to look at sites every five years to make sure the remedy is still working. Because nothing would be done, contaminants would be left on site. We have to keep looking to make sure that they're

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going away eventually or do we need to take a further measure; have conditions changed, have they changed the regs where things that weren't an impact are now an impact? That may be addressed at a later date.

Alternative two, you can see it's about a hundred cubic yards, and they'll be excavated. Again, it's estimated. That's what we anticipate. When you get out, it could be slightly more or less when you start doing the sampling because you'll be doing other soils adjacent to the drum material until we get everything.

And anything else that's in the site, any kind of extra drums, bicycles, anything else, they would also be taken off the site. And as I mentioned before, we backfill with clean fill and revegetate it. So, pre-existing conditions to when it wasn't a

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drum disposal area.

**MR. GARCIA:** When it wasn't.

**MR. QUINN:** That's what I said.

When we take the alternatives, we evaluate them against nine criteria to come up with the best balance of all these: EPA's main goal of protection of human health and the environment; Compliance with State and Federal regs; The long-term effectiveness of whatever remedy you're choosing; Reduction of the materials that are there. Sometimes you just reduce it in the groundwater down to the level that's at the groundwater treatment level. You may not take it all the way to zero, but you're reducing the toxicity of it; The short-term effectiveness

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of it. Sometimes, like this, is just digging it out, so it's a short-term fix. Other site remedies are long-term, and sometimes you have to take a shorter measure to, like, if somebody's immediately going to be impacted by something, we might put a cap on it to keep the dust from going offsite;
How easily it is to implement the remedy;
And then, ultimately, the cost.
The last two is when we deal with the State to make sure the State is onboard with our decision, do they agree or disagree, and any other agencies that would be involved depending on the contamination, and then why we're here tonight; to hear if you have any valid concerns or objections to the remedy or type of remedy we're choosing.

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This time, it's only two. Sometimes we have five or six remedies that somebody might want to know why you're choosing one over the other.
Flip to the next one. This is kind of a summary. You can see alternative two accomplishes most of the nine criteria that we would look at because, obviously, the other alternative is better on cost because it's free and this one isn't, but since this met more of the criteria we want, that's why we are recommending alternative two.
**MR. GABLE:** Whose cost is this?
**MR. QUINN:** It's the estimated cost that —
**MR. GABLE:** But who's funding it?
It's an NPL site.
**MS. BLOMQUIST:** No, EPA is

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not paying for it.
**MR. GABLE:** So, the cost to the taxpayer is the same for either.
**MR. QUINN:** Correct. Even though it's a Federal lead site, we have a responsible party that's doing the work. I have another site in the area that's a Federal lead site, and we pay for the cleanup and extra efforts.
**MR. GIARRATANO:** How do you consider alternative one to be short-term effective?
**MS. BLOMQUIST:** Right now, the site is industrial and those metal concentrations don't exceed any industrial risks. So, if the site stays as it is, it's actually okay, you can leave it there.
But if the site is ever rezoned to residential use, then those metal concentrations are not acceptable. So, that's why this provides unrestricted use in the

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future for that.
**MR. GABLE:** Can I follow up to his question?
I was looking at the risk assessment. Only in residential is there risk.
**MS. BLOMQUIST:** Yes.
**MR. GABLE:** Okay. But there are levels above the DEP industrial number.
Correct?
**MR. GARCIA:** Right.
**MR. GABLE:** So, do you consider that — how do you consider the fact that there's contamination above the state number?
Is that a driver?
**MS. BLOMQUIST:** I'm not sure. I mean, our risk assessment was it was acceptable for industrial use.
**MR. GARCIA:** Right.
**MR. GABLE:** In your overall protection and compliance with

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State and Federal regulations, there's a State regulation that says you shall not have soil contamination above this level in an industrial area. So, that's also a driver.

You don't consider that?

**MR. QUINN:** It is, but I believe it's below. So, if it's below the standard, it's not considered because it's already in compliance.

**MR. GABLE:** There were no levels of soil above the State cleanup numbers?

**MS. BLOMQUIST:** For industrial —

**MR. QUINN:** We could have checked it to say we did evaluate it, but you're trying to weigh which one is more — this is actually more protective than this one is because you're not doing anything even though you're evaluating against it.

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So, that's the reason. You consider it, but that's not one of the reasons it's not going to be protective.

**MR. GABLE:** I guess we'll just — on the short-term effectiveness question that he asked and you answered that it's safe, basically, for industrial use.

But the State may not say it's safe because copper is at 33,083, and that's above their number for clean industrial sites.

So, is that something —

**MR. QUINN:** That would fall under the two that aren't on here which we said, the State and the agency considerations.

**MR. GABLE:** Okay.

**MR. QUINN:** And also input from the community, where we would say we want to do number one and the State would say: You can't because you're not in compliance.

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This is just to help us to see which one is more protective, which remedy is protective of the —

**MR. GRAZIOLI:** Doing something and doing nothing?

**MR. QUINN:** We always have to look at this one because we need a baseline of zero and then we can evaluate —

**MR. GRAZIOLI:** Flipping a coin is doing more than what that's doing.

**MR. QUINN:** And the short-term effectiveness too, you also have to realize, the area is boxed in. It's gated, most of it.

Isn't it?

**MS. BLOMQUIST:** This area is not.

**MR. GABLE:** Was that a consideration looking at that alternative, putting a fence around the area?

**MR. QUINN:** If it were going

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to be nothing, it would probably be an institutional control of some sort. An institutional control is just a measure we take to make sure if you're not going to do something like — you may say nobody can use this for residential unless this is taken care of.

So, we don't have to do anything, but if you want to develop that parcel, you would have to clean it up, something like that. Or put a fence to keep kids and — well, not keeping kids out, but still you're taking measures to prevent easy access to it.

**MS. BLOMQUIST:** But this is such a small area, we just didn't really consider it.

**MR. QUINN:** Flip the next one.

So, as we kind of just discussed here, this is basically

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what we looked at. Alternative two is the best balance of all the criteria. We're reducing how much contamination is in the soil. Getting rid of it completely is the goal to meet the soil goals of the State. Also, it's quicker because we're just digging it out to get it out. And when it's all gone, it going to be long-term protective, so that's why we felt this was the best way to go.

Next one.

This is a summary of the same thing we just talked about; take everything out, excavate as much soil as we need to and whatever else, and restore it to pristine conditions.

And then that's just my new info. I just handed out my cards. My e-mail is on there for comments or anything too.

If you go to the Superfund website, you can get this and see

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a lot more information and some of the proposed planned that we showed, fact sheets, and all that stuff is on there.

**MR. GRAZIOLI:** When was this taken over as a Federal thing?

**MR. GARCIA:** 2000, Federal site, was taken over in 2000.

**MR. GRAZIOLI:** So, basically ten, eleven years ago.

So, it seems like recently, within last six months, there's been a lot of activity.

**MR. GARCIA:** Actually, there's been a lot of activity, it's just a lot of activity was conducted more inside the site. It's probably the last six to eight months is where we've been putting in a series of wells along Lake Denmark Road. I believe that's why we've been getting noticed more.

But we've been out here quite a bit. We've been doing a

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lot of work out here.

**MR. GRAZIOLI:** To be honest, I bought my property in 2006. I think if I knew this stuff was going on, I would have opted not to buy up there, to be totally honest with you, just because it's enough is enough with chemicals already. I deal with them all day at my job, I really don't want to be coming home to them too.

It seems like something's changed because all of a sudden, it's a big red flag, there's wells being dug. It seems like something — there's something more to this than what I know, and that's why I'm here, primarily, because I want to know exactly what's going on.

It's been contaminated for how many years and years and years? And now something's being done about it. This should have been handled a long time ago.

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**MR. GARCIA:** I think a lot of it was handled a long time ago by the State, when they took those inter-remedial measures.

The State tried to address what they could out there at that time. I mean, they went on the site, they did an evaluation to see what they could address at that time.

One of the issues that happened, certainly, is when the Radiation Technology folks were in that place, my understanding is NJ DEP and Radiation Technology Folks, there was constant going back and forth with them trying to figure out what to do with the groundwater. And when the Radiation Technology folks went out of business, at that point DEP said: Maybe, EPA, you give it a shot because we don't have this company able to do this work anymore. We believe EPA has the

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resources and the ability to expand what we did and try to identify what contamination was in the groundwater.

And that's what we've been doing at this point right now, is trying to figure that out.

**MR. GIARRATANO:** Why is the EPA willing to take that on?

**MR. GARCIA:** I don't understand.

**MR. GIARRATANO:** In other words, if it was the State's responsibility.

**MR. GARCIA:** Well, my understanding was — and I wasn't involved in it, but my understanding was in '99, when the company went bankrupt, DEP had an agreement with the Thiokol Corporation where they indemnified them. This is DEP, what they did, indemnified the Thiokol Corporation for — they agreed on certain work they would do and

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then they indemnified them to do other work.

EPA did not have that agreement with Thiokol. So, I think at that point, when Radiation Technologies went out of business, DEP came to us and said: You guys don't have that agreement. We believe you can move further with this and, hopefully, negotiate new terms with Thiokol Corporation to have them do additional work.

**MR. GIARRATANO:** So, indemnification is not complete. That's only if you're still dealing with DEP. But if you move to EPA —

**MR. GARCIA:** We do not have that.

**MR. GIARRATANO:** Bad deal for them, huh?

**MR. GARCIA:** Yeah, yeah.

**MR. QUINN:** Usually there's a document that the parties sign

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to. So, if we don't sign to it, then we're not —

**MR. GARCIA:** We wouldn't sign it.

**MR. QUINN:** We signed an agreement with them to do the work, so now we have an ongoing agreement.

**MR. GARCIA:** We have an agreement with them to do these investigations now.

**MR. GABLE:** I want to applaud — although the gentleman said why did it take so long, I want to applaud and put on record the time it's taken, how short it's taken from the end of the investigation late last year to the proposed plan. I think that's very good timing. You guys are moving fast in that.

Then I want to ask how long will it take for the action, actually going out in the field and digging up this debris, how

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long is that process going to take to get from the here, today, to the backhoe out there?

This calendar year?

**MR. GARCIA:** I believe we can achieve that.

**MS. BLOMQUIST:** It's the process. Now that we've got this feasibility study, the next step is getting comments and then doing the Record of Decision, and then, after the Record of Decision, then we need to negotiate with EPA and get the Consent Decree to actually do the work.

**MR. GABLE:** You need to get a document to do the work, even though you know you're going to do it.

You can't just do it?

**MS. BLOMQUIST:** Right. There's a process, the EPA has a process.

**MR. GARCIA:** And what the process is, is we have an

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agreement to — EPA and ATK has an agreement to do the investigation, and that's where we've been at right now.

**MS. BLOMQUIST:** We don't have anything beyond that.

**MR. GARCIA:** We don't have a legally binding document that says ATK will do this work.

**MS. SEPPI:** That's how it works in most sites where we have a responsible party.

**MR. GARCIA:** That will be the next phase. I do not believe we would not enter into this agreement. We've been discussing this. I don't believe ATK is going to be a party that would not do this work at this point.

**MR. GABLE:** Does the Record of Decision get signed before that agreement is negotiated?

**MS. BLOMQUIST:** Yes, that has to be done first and then you do agreement. And then we have to

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do a remedial design that gets approved.

**MR. MARTIN:** Superfund.

**MR. GABLE:** We would do something like we would say let's do removal action and just go out and get a short, abbreviated process to do a dig and a haul. That's fairly simple, and I think the public would like to see it done. It's just a visual thing more than risk.

But it seems like it — but you have a process you have to go through.

**MR. GARCIA:** Yes, we have a process.

And, again, you have to take into consideration what we're looking at. I mean, this is a pretty small, pretty straightforward action that we need to take. It's going out there, removing material offsite. We're not building a treatment

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plant, we're not designing an elaborate type of system.

**MR. GIARRATANO:** Maybe that's why the gentleman mentioned why can't we just get it going?

**MR. GARCIA:** That is EPA's process on how we —

**MR. QUINN:** It's the same process no matter how big the project is.

**MR. GIARRATANO:** You read my mind, because I was thinking my God, what if it was a bigger thing?

**MR. QUINN:** It's the same process, it just might take a little longer for a bigger project because there are more things to discuss. But this should be straightforward enough that we should be able to do it quickly.

**MR. GIARRATANO:** I asked earlier what about Lake Denmark and where is that flowing and what is that polluting as it flows out.

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Is there a concern to polluting downstream?

**MR. GABLE:** Is it legal for me to answer that question?

**MS. SEPPI:** Yes, unless your answer is wrong.

(Laughter)

**MR. GABLE:** I can't address the contamination coming off Thiokol Radiation Tech into the lake.

Lake Denmark, most of it is part of a Superfund in Picatinny, which is part of another Superfund site in which Lake Denmark is called a site. We've sampled it; we sampled the water in it, we've sampled the sediment in it, we've done geophysicals around the lake, and we're going to be doing more investigation, but we've come to the conclusion that there's no action needed for that lake.

We've also sampled Green Pond Brook as — we're eventually

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replacing the dam on the Denmark, but that's an aside. But we sampled the Green Pond Brook and we've sampled Lake Picatinny, and there are low level hits of volatile organics from Picatinny and Green Pond Brook, but by the time it leaves Picatinny, about three miles further from your site, you don't see anything leaving.

**MR. GIARRATANO:** By the time it gets to the outflow portion of Lake Denmark —

**MR. GABLE:** Yeah, we don't see any volatiles in Lake Denmark with the investigation we did ten years ago.

**MR. GIARRATANO:** Is that because there's so much volume in Lake Denmark that by the time it gets down there, it's —

**MR. GABLE:** That could be it. And that could be a question that could be asked whether or

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not — if the groundwater is entering the lake, does it have any impact on the lake?

I'm not sure if that's been answered. That's not part of this discussion, but it seems like that would be a logical thing that we would be investigating if EPA told us to do it.

I'm sorry, I'm not —

**MR. GARCIA:** That's fine.

**MS. BLOMQUIST:** Groundwater is a whole, obviously, separate issue. We've installed recently just some wells along Lake Denmark. They've only been sampled one time, but we have relatively low concentrations of volatile organic compounds. So, they're relatively low concentrations.

Volatile organics, by nature, they volatilize. So, when they do get into the lake, they may just evaporate and they

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attenuate to — so, the volume, like you said, of Lake Denmark plus the relatively low concentrations of volatile organics, you're not going to see that typically in a lake.

**MR. GARCIA:** We are monitoring it, and we did put wells along the lake.

**MS. BLOMQUIST:** We just put those in. We've sampled one time, and we'll be sampling again in May.

**MR. GABLE:** Is there a plan to sample the water in the lake and interface or below the sediment?

Just wondering.

**MR. GARCIA:** That's something EPA will certainly evaluate. Right now, I don't know if we're at that point.

**MR. GABLE:** Okay.

**MR. GARCIA:** We've just installed these wells. We'd like

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to do several more rounds of sampling in the groundwater to see what those levels are showing.

Secondly, I want to mention to you we had a production well on the property for many, many years. That's been shut off about a year or two now. And, so, we do believe there was some influence from that location from the draw of that well.

So, now what we're seeing is since we're not pumping any water on the site, we're seeing the natural gradient of the site and where the water is all going.

So, there's a lot of dynamics that are going on right now, and we're trying to understand and study that by putting in additional wells. As we get information, we'll certainly share it with people who are interested.

**MR. GIARRATANO:** If the

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groundwater goes away from our homes, is it possible that the contaminated soil — I mean, the groundwater gets effected down there because it comes through the soil into the water table.

Is it possible that the contaminated soil — in other words, does that travel?

Does the contamination in the soil travel?

Might that be traveling up towards our homes?

Do we have to worry about growing vegetables or anything like that?

**MR. GARCIA:** I would say no.

**MS. BLOMQUIST:** No.

**MR. GARCIA:** From what we understand, the contamination came from the site and from the operations that had happened there previously.

**MR. GIARRATANO:** I'm wondering what kind of creep can

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happen.

Like salt in an aquarium will creep, you know, like, creep. I don't think it cares what the groundwater direction is, it's going to creep wherever it's going to creep.

**MR. QUINN:** If it's in the soil, it will just go down.

**MS. BLOMQUIST:** Straight down. It doesn't spread out.

**MR. GRAZIOLI:** As a resident, people who live here, would you guys like volunteers taking water samples from our wells?

I've never seen or heard of anybody doing that for me.

**MR. GARCIA:** We've been doing residential sampling. We've been targeting the homes closest to the site.

Our belief is that those homes would be the first impact homes if we saw anything. So,

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that's the ones we've been targeting. We've sampled those homes numerous times and the Department of Health has sampled those homes numerous times. We haven't seen anything in those wells. That's why we haven't expanded sampling to other homes.

**MR. GIARRATANO:** Not even close, not like it's elevated but not quite the level you worry about?

**MS. BLOMQUIST:** No, nondetect or low.

**MR. GIARRATANO:** Would you test ours?

**MR. GARCIA:** I guess so. I mean, again, the thing is I don't know what the benefit of that would be other than certainly —

**MR. GRAZIOLI:** Peace of mind.

**MR. GARCIA:** — peace of mind.

I certainly will talk to

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Carrie about it and see if that's something we can do.

But, we haven't seen it, so, I mean —

**MR. GRAZIOLI:** Let me put it this way: If you were living next to a contaminated site, wouldn't you want somebody to come up and knock on your door and say: You know what? We're going to make sure you're okay.

Being a resident of the area — we're not even two miles away from this site — I would think somebody would say: Hey, we've been doing a lot. We're trying to clean it up. Just to make sure, to make you feel better, we're going to do some testing in your water well and make sure everything is good.

To me, that means something to me as a resident there. I mean, it's bad enough if I ever go to sell the place, somebody sees I

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have an EPA cleanup down the road, that's going to be effecting the sale of my house, I'm sure.
My taxes are constantly going up. I'm paying thirteen grand a year for two acres of property.
**MS. BLOMQUIST:** So far, all of our data suggests everything is contained on site except for some groundwater discharging —
**MR. GRAZIOLI:** I just kind of need a hug from somebody and have them say: Come on, I'll check your stuff and just make sure everything is all right.
**MS. BLOMQUIST:** I don't know where you guys live, but typically, EPA, like Diego said, you start at the perimeter and work your way out if you have to. And we haven't found that we had to go any further. There hasn't been any data that suggests that anything has migrated beyond that

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site.
That's just how I think that determination has been made historically.
**MR. QUINN:** We'll talk about it.
**MR. GARCIA:** We can certainly discuss it.
**MR. QUINN:** We have your info and your addresses.
**MR. GIARRATANO:** Thank you. That would be good.
**MR. GARCIA:** You have their addresses.
**MS. SEPPI:** They both signed in.
**MR. GIARRATANO:** 20 and 22 Lake Denmark.
**MR. GARCIA:** That's fine.
**MR. GRAZIOLI:** We have families. We're just concerned about our own health.
**MR. GARCIA:** We understand.
**MR. GRAZIOLI:** I understand you guys are doing what you have

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to do.
**MR. GIARRATANO:** So, this was a hearing, basically, to solicit commentary from the public on whether we prefer we do something or do nothing?
**MR. GARCIA:** It's part of the process.
**MR. GIARRATANO:** I'm onboard with you do something.
**MR. GRAZIOLI:** Do something, please.
**MR. QUINN:** In the future, any further activities, we'll probably have some more meetings.
**MR. GARCIA:** This is one of several phases. We'll have another phase where EPA is going to try to address the buildings and structures and other things we find out there because that's still a whole other aspect of what we need to do.
**MR. GIARRATANO:** I'd like to see it.

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**MR. GARCIA:** This is a big site, and we have to do something with those buildings.
**MR. GRAZIOLI:** All the asbestos and stuff?
**MR. GARCIA:** The site, from what we understand right now from the building inspector, it's an old industrial facility. So, it's there.
We have taken care of, under a removal action, an imminent threat because what we found was behind the 63-acre parcel, it's fenced, but there's also a trail behind a portion of the site, and we found about six hundred feet of piping that had asbestos that was in disarray and blowing in the wind. And all that asbestos was blowing onto the trail.
So, several years ago — I don't remember the exact date, but several years ago EPA went there and did an action to remove all

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that asbestos. And we've removed all that. We actually dug up part of the trail, removed a lot of the soil, tested the soil, and made sure the area is clean and addressed that.

We went around the site and actually looked for those type of issues with asbestos because we knew it was out there. There is still asbestos in the buildings, but it's not an immediate threat and it's contained in the building. So, at this point, we can leave it.

**MR. GIARRATANO:** Public can't get there.

**MR. GARCIA:** I mean, the site is locked.

**MS. BLOMQUIST:** You're not supposed to get in there.

**MR. GARCIA:** If someone wants to get in there, they can get in there. We've tried over the years to try to contain that

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site. It's a big site.

**MR. GIARRATANO:** The MPs don't patrol that?

**MR. GARCIA:** No. The Rockaway Township Police Department is aware of the activities out there. We have an agreement with them to go out there and patrol the area occasionally. But it's a big site.

**MS. SEPPI:** We worry about that because it's an attractive nuisance for kids, a great place to go and play. And that's what really worries us.

**MR. GARCIA:** We've tried for years to curb that. It's tough.

**MR. GRAZIOLI:** Let me ask you a stupid question. As you're coming down Lake Denmark, going away from the site, before you go down the swoopy hills to the lake that's on your right, right up there to the left there's a big

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yellow barrier.

What's back in there? It's like a big metal —

**MR. GARCIA:** Swing gate? I think that's part of Picatinny property, actually, at that point.

**MR. GRAZIOLI:** I was just curious. People usually dump right before there.

**MR. GARCIA:** Towards the homes or away from the homes?

**MR. GRAZIOLI:** Away from the homes.

**MR. GARCIA:** Okay.

**MR. GRAZIOLI:** Going towards Picatinny. As you're coming down, it's like you actually go down these, like, twisties and the lake is on your right. Right before you go down the twisties, there's a little off area with the gated thing there.

I was just curious.

**MR. GABLE:** Right before or

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right near the ballfields?

**MR. MARTIN:** Before you get to the ballfields.

**MR. GABLE:** They set up an area to do paintball testing for the Marines. So, that was a testing for Marines and Soldiers. That was there, that was tested there.

**MR. GRAZIOLI:** Every now and again, I would see a sign that said "Paintball in use."

I thought that would be cool.

**MR. GABLE:** That was stopped for ecological reasons, I'm sure.

**MR. GIARRATANO:** More stuff to go in the ground.

No more testing.

**MR. GARCIA:** Any other questions?

You have Brian's number.

**MR. GIARRATANO:** Yes, we do.

**MS. SEPPI:** How about the rest of your neighbors?

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Do they talk about this at all?
**MR. GRAZIOLI:** Absolutely. This has been a big buzz with e-mails.
Of course, everybody tonight never showed up. Everybody wanted to come here and ask a lot of questions.
We're just concerned because these are our homes.
**MS. SEPPI:** Now you have information that you can take back and talk to them and be helpful. And tell them, they can call us any time.
**MR. GRAZIOLI:** I think I spoke to him, and that was great. Definitely informative and walked me through a lot of process.
But living here, we just want to know we're living in a safe area.
**MS. SEPPI:** Absolutely. And we know this is kind of

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a bad week to have a meeting because of Passover week and Easter week, but we have to have our meeting in the middle of the comment period.
I don't know if that would have made a difference.
**MR. GRAZIOLI:** I think a lot of people, it's like different birthdays and getting ready for the weekend. Hectic.
**MS. SEPPI:** I know. It's a bad time, really.
Now you're the harbinger of news. You have to go back and tell everybody what you found out tonight. And encourage them to call us.
**MR. GRAZIOLI:** I appreciate that.
**MR. QUINN:** Or even e-mail. E-mail is free.
**MR. GRAZIOLI:** I'm primarily worried about my drinking water and property value. I understand

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it's an industrial area. I'm not stupid, I've lived here all my life. Things are what they are.
I just want to make sure whatever it is, it's safe for us. That's the bottom line for me.
**MS. SEPPI:** It's totally understandable.
Anything else?
**MR. GARCIA:** Any other questions?
That's it. Well, thank you all.
**MS. SEPPI:** Thanks for coming out. We appreciate that.

(Time noted: 8:20 p.m.)

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CERTIFICATE
STATE OF NEW JERSEY)
) ss.
COUNTY OF HUDSON )
I, LINDA A. MARINO, RPR, CCR, a Shorthand (Stenotype) Reporter and Notary Public of the State of New Jersey, do hereby certify that the foregoing transcription of the public hearing held at the time and place aforesaid is a true and correct transcription of my shorthand notes.
I further certify that I am neither counsel for nor related to any party to said action, nor in any way interested in the result or outcome thereof.
IN WITNESS WHEREOF, I have hereunto set my hand this 9th day of May, 2011.

LINDA A. MARINO, RPR, CCR

## Lawyer's Notes

## D



## E



## F

## G



## H



## I



## J



## K



## L

## Q



## R



## S

## T



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## V



## W



## Y



## Z

## Lawyer's Notes

# APPENDIX IV

## Administrative Record Index

**RADIATION TECHNOLOGY, INC. SITE**
**OPERABLE UNIT TWO**
**ADMINISTRATIVE RECORD FILE**
**INDEX OF DOCUMENTS**

## 3.0 REMEDIAL INVESTIGATION

### 3.3 Work Plans

P. 300001 - 300692
DOC. ID 108527

Report: Remedial Investigation/Feasibility Study Work Plan-Operable Unit 2 (OU-2), RTI Superfund Site, Rockaway Township, New Jersey, prepared by Conestoga-Rovers & Associates, prepared for U.S. Environmental Protection Agency, Region 2, August 2008.

### 3.4 Remedial Investigation Reports

P. 300693 - 300699
DOC. ID 108520

Report: U.S. Environmental Protection Agency Comments, Site Characterization Report, Radiation Technology, Inc. Superfund Site, November 10, 2009.

P. 300700 - 303753
DOC. ID 108521

Report: Draft Site Characterization Summary Report, Operable Unit 2, RTI Superfund Site, Rockaway Township, New Jersey, prepared by Conestoga-Rovers & Associates, prepared for U.S. Environmental Protection Agency, Region 2, February 2010.

### 3.5 Correspondence

P. 303754 - 303754
DOC. ID 108522

Letter to Ms. Karie Mars, P.E., Remediation Engineer, Alliant Techsystems, Inc., from Ms. Carole Petersen, Chief, New Jersey Remediation Branch, U.S. Environmental Protection Agency, Region 2, re: Administrative Order on Consent (02-2004-2033), Conditional Approval of Operable Unit Two Site Characterization Summary Report, Radiation Technology, Inc. Superfund Site, November 25, 2009.

P. 303755 - 303756 Technical Memorandum, Ref. No.: 004354, to Ms. Karie Blomquist, ATK, from Mr. Robert Martin, Conestoga-Rovers & Associates, re: Identification of Candidate Technologies, Radiation Technology Incorporated Superfund Site, Rockaway Township, New Jersey, January 11, 2010.

DOC. ID 108523

P. 303757 - 303757 Letter to Mr. Diego Garcia, New Jersey Remediation Branch, Emergency & Remedial Response Division, U.S. Environmental Protection Agency, Region 2, from Ms. Karie (Mars) Blomquist, P.E., Remediation Engineer, Alliant Techsystems, Inc., re: Administrative Order on Consent (02-2004-2033), Identification of Candidate Technologies Memorandum, Operable Unit Two, RTI Superfund Site, Rockaway Township, New Jersey, January 12, 2010.

DOC. ID 108524

P. 303758 - 303758 Letter conditionally approving the report to Ms. Karie Blomquist, P.E., Remediation Engineer, Alliant Techsystems, Inc., from Ms.Carole Petersen, Chief, New Jersey Remediation Branch, U.S. Environmental Protection Agency, Region 2, re: Administrative Order on Consent 02-2004-2033), Operable Unit Two (Soil Remedial Investigation), **Site Characterization Summary Report**, Radiation Technology, Inc. Superfund Site, Rockaway Township, New Jersey, February 22, 2010.

DOC. ID 108525

P. 303759 - 303761 Letter conditionally approving the report to Ms. Karie Blomquist, P.E., Remediation Engineer, Alliant Techsystems, Inc. from Ms. Carole Petersen, Chief, New Jersey Remediation Branch, U.S. Environmental Protection Agency, Region 2, re: Administrative Order on Consent (02-2004-2033), Operable Unit Two (Soil Remedial Investigation), Radiation Technology, Inc. Superfund Site, **Remedial Investigation Report**, Rockaway Township, New Jersey, July 22, 2010.

DOC. ID 108554

**7.0 ENFORCEMENT**

**7.3 Administrative Orders**

p. 700001 - 700065 Administrative Order on Consent for Remedial Investigation/Feasibility Study, Operable Unit 2, U.S. EPA Index No. 02-2004-2033, In the matter of:

DOC. ID 108557

Radiation Technology Inc. Superfund Site, Alliant Techsystems Inc. Respondent. Proceeding Under Sections 104, 122 (a), and 122 (d)(3)of the Comprehensive Environmental Response, Compensation, and Liability Act as amended (42 U.S.C. §§ 9604, 9607, 9622(a), 9622(d)(3), September 28, 2004.

**RADIATION TECHNOLOGY, INC. SITE**
**OPERABLE UNIT TWO**
**ADMINISTRATIVE RECORD FILE UPDATE**
**INDEX OF DOCUMENTS**

## 3.0 REMEDIAL INVESTIGATION

### 3.4 Remedial Investigation Reports

P. 303762 - 307225
Doc ID 108538
Report: Remedial Investigation Report, Operable Unit 2, Radiation Technology Inc. Superfund Site, Rockaway Township, New Jersey, prepared by Conestoga-Rovers & Associates, prepared for U.S. Environmental Protection Agency, Region 2, August 2010.

### 3.5 Correspondence

P. 307226 - 307231
Doc ID 108539
Letter to Mr. Diego Garcia, New Jersey Remediation Branch, Emergency & Remedial Response Division, U.S. Environmental Protection Agency, Region 2, from Ms. Karie Blomquist, P.E., Remediation Engineer, ATK, re: Administrative Order on Consent (02-2004-2033) Remedial Investigation Report, Operable Unit Two, Radiation Technology, Inc. Superfund Site, Rockaway Township, New Jersey, August 23, 2010. (Enclosures: (1) Report: Remedial Investigation Report, Operable Unit 2, Radiation Technology Inc. Superfund Site, Rockaway Township, New Jersey, prepared by Conestoga-Rovers & Associates, prepared for U.S. Environmental Protection Agency, Region 2, August 2010; (2) Responses to U.S. EPA Comments dated July 14, 2010, Draft Remedial Investigation Report, Operable Unit Two (OU2), Radiation Technology, Inc. Superfund Site, Rockaway Township, New Jersey).

## 4.0 FEASIBILITY STUDY

### 4.3 Feasibility Study Reports

P. 400001 - 400038
Doc ID 110816
Report: Focused Feasibility Study Report, Operable Unit 2, Radiation Technology, Inc. Superfund Site, Rockaway Township, New Jersey, prepared by Conestoga-Rovers & Associates, prepared for U.S. Environmental Protection Agency, Region 2, March 2011.

## 10.0 PUBLIC PARTICIPATION

### 10.9 Proposed Plan

P. 10.00001- Report: Superfund Program Proposed Plan, Radiation
10.00007 Technology, Inc. Superfund Site, prepared by U.S.
Environmental Protection Agency, Region 2, 2011.

Doc ID 110817

# APPENDIX V

## State Letter of Concurrence

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
401 East State Street
P.O. Box 420 Mail Code 401-05F
Trenton, NJ 08625-0028

BOB MARTIN
Commissioner

August 30, 2011

Walter Mugdan, Director
Emergency and Response Division
U.S. Environmental Protection Agency
Region II
*290 Broadway*
New York City, New York 10007-1866

Re: Record of Decision (ROD) Letter of Concurrence
Radiation Technology, Inc. Superfund Site
108 Lake Denmark Road
Rockaway Township, Morris County
SRP PI# 019440

Dear Mr. Mugdan:

The New Jersey Department of Environmental Protection (Department) has completed its review of the September 2011 Record of Decision (ROD) for the Drum Disposal Area at the Radiation Technology, Inc. Superfund Site, Rockaway Township, Morris County, New Jersey, prepared by the U.S. Environmental Protection Agency (EPA) Region II. The Department concurs with the selected remedy for the site.

The response action described in this document addresses a drum disposal area at the Radiation Technology, Inc. site. A previous ROD, signed in May 1994, addressed groundwater contamination at the Site.

The major component of the Selected Remedy is the following:

- Excavation of drum material and surrounding soils with off-site disposal and/or treatment.

The Department appreciates the opportunity to participate in the decision making process to select an appropriate remedy at the Radiation Technology, Inc. Site and is looking forward to future such cooperation with EPA during the remaining remedial work at this site.

Sincerely,

Len Romino

Len Romino, Assistant Director
Responsible Party Remediation

cc: Honorable Louis S. Sceusi, Mayor, Rockaway Twp.
Mary Cilurso, Municipal Clerk, Rockaway Twp.
Brian Quinn, USEPA Region II